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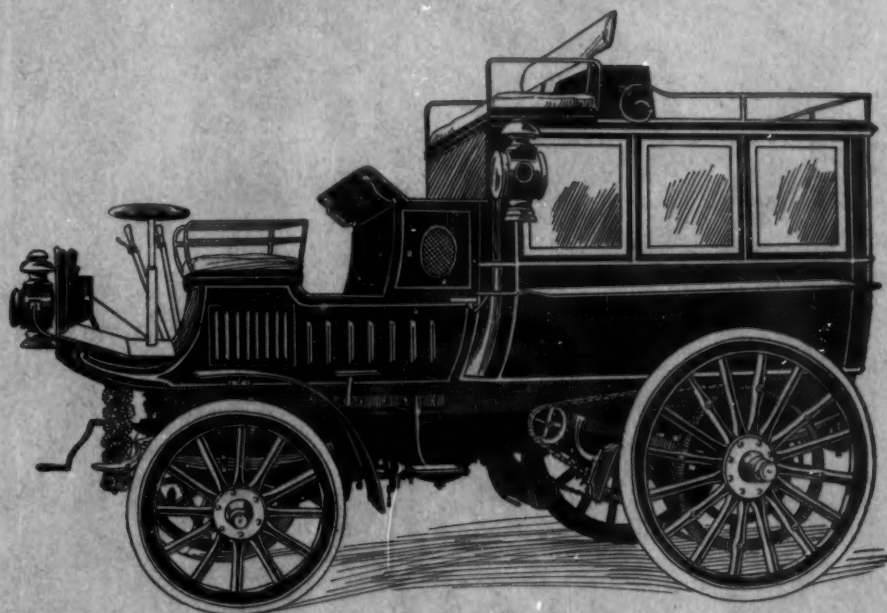
Motor Age

Vol. II. No. 12

SEPTEMBER 25, 1902

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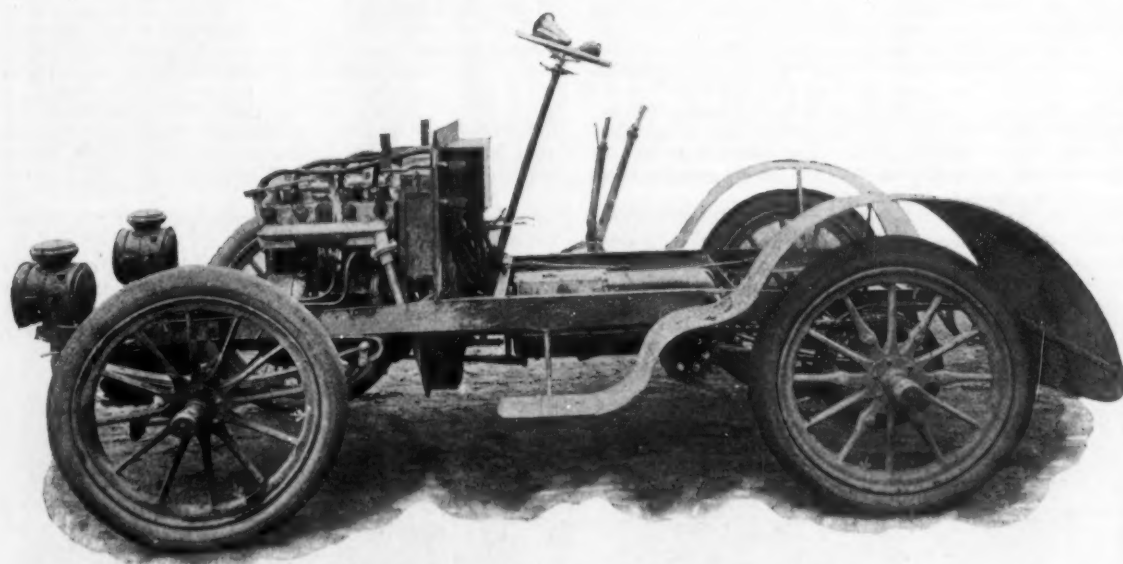
WITH WHICH IS INCORPORATED
CYCLE AGE

VOL. II. No. 13.

CHICAGO, SEPTEMBER 25, 1902.

\$2.00 PER YEAR

LOCOMOBILE COMPANY MAKING GASOLINE CARRIAGES.



THE NEW LOCOMOBILE WITH BODY REMOVED.

NEW YORK, Sept. 19.—Announcement was made today of the more than suspected and long expected Locomobile gasoline car designed by A. L. Riker. The new vehicles are being made at the Overman Automobile Co.'s factory at Chicopee Falls, Mass. One of them has been completed and is, as was suspected, the gasoline Locomobile entered by A. L. Riker in the reliability run. Ten others are almost completed.

"We recognize the demand for gasoline cars for touring purposes," said J. A. Kingman in letting the cat out of the bag to the *MOTOR AGE* man, "and propose to meet it to the best of our ability. We still believe that steam machines are better adapted to all around service, and especially city use, and shall continue to manufacture them in our present factories. All the gasoline cars, however, will be made at the Overman factory.

"The present cars are all of 2,000 pounds," he continued, "and the retail price will be \$5,000. American gasoline car builders have been trying to sell too cheaply according to our idea. We will also have, however, a 1,500 pound model to sell at a somewhat lower figure.

To speak generally our engine will be a four cylinder upright with 12 horsepower, capable, however, of developing 18 horsepower. The feature of the cars will be the flexible throttle control, whereby the speed may easily be kept down to the lowest city speed limit requirements."

Mr. Riker's record as a designer in the automobile world is well known. He first became prominent as designer of the cars of the Riker Electric Vehicle Co., now a part of the Electric Vehicle Co. During this connection he designed a gasoline car. Since he severed his connection with the E. V. Co. some months ago he is known to have been at work on designs for a gasoline vehicle in a room adjoining the Locomobile Co. of America's New York offices. That it was for the Locomobile people was easily guessed since the Overman Automobile Co. has been recognized as closely associated with the Bridgeport concern. As a designer and driver of racing machines Mr. Riker has won great prominence. His 1:03 for a straightaway mile stands as the world's electric record. He also won in an electric of his own de-

sign America's first road race, which was for 50 miles over Long Island roads, and his time is still American record for the distance.

Cyclists and Automobilists Clash.

New York, Sept. 21.—Wheelmen and automobilists have been friendly allies in the good roads movement in this city, resulting in the formation of the Associated Road Users, a highway improvement federation, last spring. Good feeling between the two classes of horseless vehicle users, however, is likely to be interrupted by the cyclists having taken upon themselves to draft and have introduced to the board of aldermen an ordinance providing for a license system for motor vehicle operators. There seems to be a majority sentiment among New York automobilists in favor of a licensing system of some sort as a solution of reasonable municipal control of the use of the highways and the speed thereon by the new vehicles. That the wheelmen, however, should have taken upon themselves the introduction of such an ordinance is looked upon by the automobile fraternity as in bad taste. Some frankly characterize it as "a piece of damned impertinence."

The action referred to had its origin at a meeting of the officers of the New York division, L. A. W., where-at Joseph B. Thompson, chairman of the rights and privileges committee, was directed to draw and submit to the board such an ordinance. Mr. Thompson is a lawyer and drew the pending street sprinkling, highway and speed ordinances endorsed by the Associated Road Users. His draft was approved with the preamble that while the wheelmen were the natural allies of the automobilists along parallel lines, they were users of the highways and entitled to protection against reckless and incompetent motor vehicle drivers.

The ordinance was introduced on Sept. 4 and referred to the law committee. It provides that no person shall operate a motor vehicle without a license, but excepts motor cyclists and trolley car motormen from its provisions. The mayor is to appoint three persons, to be known as the board of examiners. The license fee will

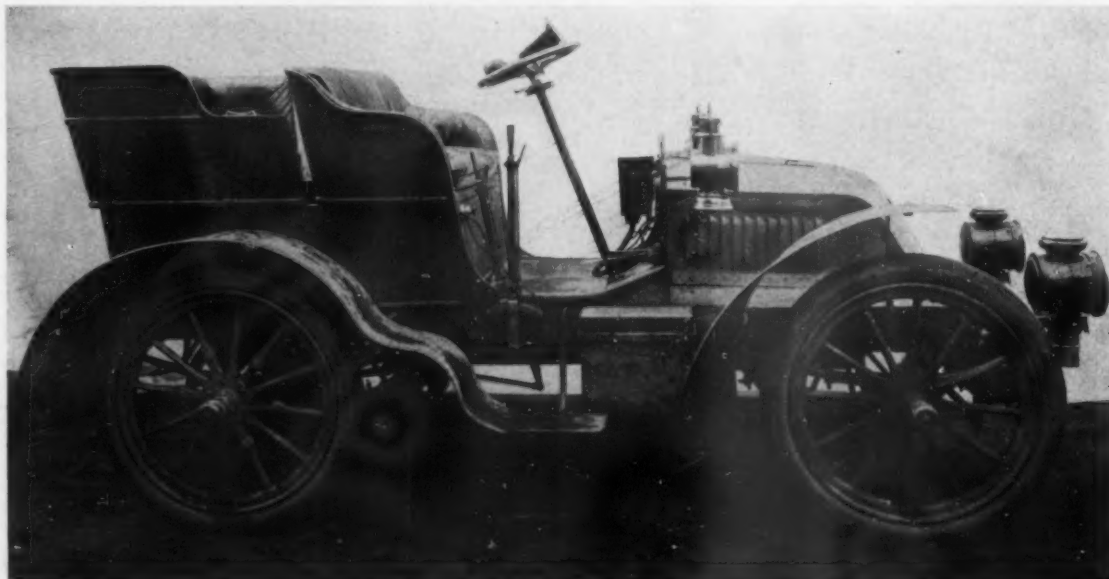
be \$10 for private vehicles and \$3 for public vehicles for hire seating two persons, and \$5 for more than two persons. Punishment for operating vehicles without a license is fixed at a fine not less than \$10 nor more than \$50 or imprisonment for not less than 2 nor more than 10 days.

Winthrop E. Scarritt, president of the American Automobile Association, when made acquainted with the provisions of the proposed law by a MOTOR AGE man, said:

"I think a license system is the solution of the problem, to which in the end we will have to come. I think the initiative in the matter, however, came in bad taste from our allies, the wheelmen. The automobilists are a law abiding body of citizens and desire to co-operate with the law makers and authorities in the enactment of reasonable and effective ordinances and their enforcement. The American Automobile Association is on the eve of taking up this question of speed laws, and it might better have been left to us to co-operate with the aldermen in the solution of the problem to the satisfaction of motor vehicle users and the public as well.

"The provisions of the proposed ordinance in its present form appear impracticable and cumbersome. There is too much red tape about it. Power of revocation of license is given the mayor. His honor will be thus forced to spend much of his time in trying automobile cases. It would seem to be better that the magistrates after a trial be granted the power of revocation as a part of the punishment or the punishment itself for speed and highway law violations. You know, though, that my pet idea is action against the vehicles themselves through a system of impounding. Take away from a man the use of his machine and he would take mighty good care not to risk such a calamity by violations of the highway laws.

"It strikes me, too, that a salaried board of examiners would lead to political jobbery. Examiners chosen from the Automobile Club of America and serving without salary would insure a competent board, free from any



LOCOMOBILE COMPANY'S GASOLINE CAR. . . .

suspicion of jobbery, to whom might safely be intrusted the examination of candidates."

Mr. Thompson, drafter of the proposed law, waxes exceeding wroth at Mr. Scarritt's criticism of his ordinance, of the good taste of the wheelmen in taking the initiative, and especially at the suggestion that the examiners be chosen from the A. C. A. In a written statement he says:

"Notwithstanding the somewhat beatific standard of excellence undoubtedly radiating from those gentlemen, I would suggest that there are some who believe that not all the concentrated wisdom and virtue of the city is to be found within the Automobile Club of America and that there are some who believe that three citizens could be found who would act competently and impartially as a commission to license automobiles.

"During the past summer not less than three wheelmen have been killed in this city by automobiles, one up the state, another in Connecticut and one in New Jersey. This is sufficient justification for the league interfering, even if it was not pledged to protect the highways from abuses.

"One of the purposes for which the league was formed, and which it has always advocated, is to keep the highways safe and free from danger to travel. This evil, which we now seek to remedy, has been endured for sometime, and almost the only step taken by the automobilists looking toward a remedy was the establishment of a sort of equine kindergarten.

"As to the other points of criticism of the ordinance I can only say that no improvement over the plan contained therein is suggested. The ordinance was prepared with great care and its scheme is entirely practical. At any rate all these matters can be discussed much better when the ordinance comes before the committee of the board of aldermen for investigation, and if any improvements are then suggested they will be more carefully considered."

The board of aldermen has adjourned to Oct. 7, and the law committee informs Mr. Thompson that there will be no public hearing until after its reconvening.

'Frisco Club Wins Mayor's Good Will.

San Francisco, Cal., Sept. 19.—The banner joy occasion incidental to the history of the Automobile Club of California occurred two nights ago in the banquet hall of the Cliff House. It was the club's second annual dinner, attended not only by four-fifths of the 125 members and their ladies, but by the mayor of the city and wife, several supervisors, a police commissioner and the chief of police, and two Golden Gate Park commissioners. After an enjoyable repast F. A. Hyde, president of the club, was brought to the fore as toastmaster, precluding his cleverness in this role with a felicitous speech in which he took the dead give away liberty of proclaiming a club secret that seemed to break into pieces the usual dignity and equanimity of the principal guest of the evening, the Hon. Eugene Schmitz, mayor of the city. With remarkable celerity, however, Mr. Schmitz succeeded very well in partially gathering himself together in time to respond to the next succeeding call, remarking in part as follows:

"I feel like emphasizing my feeling of delight at being with you tonight, and thank you cordially for the considerable and valuable information that has already come to me through this happy night's companionship. As I rode out here tonight with Mr. Courtney Ford in his massive Winton racer, rising three feet off my seat at two frequent intervals, learning in the meanwhile from Chauffeur Ford that the car was not to blame, but the city's rutty roadway, and that we were being promoted along at only an 8-mile per hour gait instead of 40, as I supposed, I made up my mind to do all I could in future to help the San Francisco Cycle Board of Trade and the Automobile Club of California on their crusade

for good streets. And especially do I wish to thank you automobilists for the information contained in your president's opening remarks—the information that you speedy locomotion devotees got together when I was entered in a recent race for the mayoralty, and after looking us over deciding that I was the speediest in the run, and then turned to and elected me. I have often wondered how it all came about, but now I know, since your president has said it, and I assure you my heart warms me afresh in appreciation of the automobile club. In the buzz of conversation about me this evening I have heard the advocates of gas machines, steam machines and electric machines, each praising his particular kind. And if you will permit me, as a politician, I will put in a good word for the 'hot air' machine. But, seriously, I believe there is much justice in the requests of the automobilists who have been meeting with opposition, obstructions that are shared in common with all that engage in advancing new improvements. I never realized before tonight how much our streets needed improvement. And I believe, too, that the automobilists should have the right to travel the park driveways, and I pledge you that henceforth I shall do all in my power to give equal rights to all and special privileges to none."

The address of Mayor Schmitz was heartily applauded at numerous intervals, and likewise the friendly remarks of the other city officials named, each of whom spoke briefly. In conclusion President Hyde announced, midst great applause, that everybody could drive back to the city over the south way of the parks' boulevards, by special permission of the mayor. This is a concession the club has long sought at the hands of the supervisors but never attained.

New Automobile Clubs Forming.

A meeting to arrange the preliminaries for the formation of the Toledo Automobile Club occurred last week. Dr. Charles P. Wagar was elected chairman and H. C. Tillotson secretary. A committee was appointed to draw up a constitution and by-laws; they are Grant Williams, George D. Palmer, Jr., and F. H. Dodge. Another meeting was called for Saturday next. Those present included the officers named above, and J. N. Bick, George R. Ford, C. Daudt, Louis A. Leffring, F. J. Landgraf, George K. Detwiler, W. N. Braun, V. M. Falardeau, C. B. Spitzer, D. W. Murphy, W. H. Potter, H. R. Felker, Ezra E. Kirk, H. H. Brand, M. G. Bloch, Guy R. Ford, Jerome H. Smith, M. A. Scott, J. J. LaSalle, Norman DeVeaux, L. E. Beilstein, A. S. Raymond, G. A. Kennedy, George Troutt, L. Lichtie, and two out-of-town visitors, Theodore C. Whitcomb of Indianapolis, and Orlando Weber of Milwaukee.

An automobile club has been organized at Warren, Mass., and the following officers elected: George W. Bennett; vice-president, Lathrop V. Chaffee; secretary, Edward M. Moran; treasurer, Daniel A. Hathaway; executive committee, Frederic W. Shaw, Russell Gold, William A. Barry, Miles Sweeney, John F. Teehan, Daniel A. Hathaway, Edward M. Moran, Lathrop V. Chaffee and George W. Bennett. The club will give a series of dances and entertainments this winter and the following committee has been chosen to take charge: John F. Teehan, Warren J. Keith, Lewis Parker, Carl Svenson, Edward W. Canning, William Slater, John J. Gaffey and Charles F. Harwood.

Up to date mayors continue to veto unjust ordinances. Mayor Higgins of Racine, Wis., has refused to permit the passage of an ordinance fixing the speed limit at 6 miles an hour, and Mayor Finer has for a second time vetoed an ordinance which would have made it necessary to have taken out a license at Waukegan, Ill., and to have driven at 8 miles an hour through the town. The council nevertheless passed the ordinance over the mayor's veto.

MOTOR AGE

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Subscription, Two Dollars a Year, - Six Months, One Dollar

STEAM CARS, PAST AND FUTURE.

For two years the steam automobile held almost undisputed possession of the American market. Meanwhile the gasoline vehicle developed, proved its ability to cover great stretches speedily and economically and was exploited by many makers. Nineteen hundred and one was a steam year. Nineteen hundred and two has been a gasoline year. Several makers of steam carriages have retired from the field, some voluntarily, some under compulsion. Men who in the larger cities once used steamers have in many cases abandoned them for gasoline cars. And so an impression has gone abroad that steam has run its race and will soon retire from the market. Not so, however. The facts are that the gasoline car was in its experimental stages before the steam car was seriously considered as a commercial possibility. It took years to develop. Then came the steamer, pushed by men of money and ability. It was noiseless, apparently simple and inexpensive. It was the first thing offered at a popular price. Naturally it had many imperfections and, after a short trial, no one knew it better than the makers, but had they stopped to correct every imperfection as it developed steam carriages would now be where gasolines were two years after their introduction. Men who blame manufacturers for not immediately correcting every fault do not realize that months of preparation are necessary for a season's output, and that, once the preparation has been made, changes would result in demoralization of the plans. Steam carriages developed no more imperfections than gasolines. The difference is that twenty times as many steamers were made at the same relative period of their existence.

The manufacturers have vast experience resulting from troubles left behind. Changes in construction will be such as will appeal to lovers of steam, and, as a matter of fact, the steam engine is after all far better understood than the hydro-carbon motor. Steam carriages are neither dead nor about to die. Their performances within the last few months speak for them. They have demonstrated their ability to make at least 100 miles without a stop and with small loss of water. That they possess speed everyone knows.

Believing, then, that the steam carriage will continue in favor among a large percentage of users, and that information concerning them will be as interesting as ever, **MOTOR AGE** commences this week a series of articles descriptive of the engine and boiler designed to interest the beginner. It will be as profusely illustrated as circumstances require.

TWO CYCLE AND FOUR CYCLE.

The Gas Engine takes issue with **MOTOR AGE's** suggestion of some weeks ago that "single cycle" and "two cycle" would be better terms to use in describing the two types of gas engines in common use than those now applied, and claims that two cycle and four cycle engines each work in a single cycle, and cannot do otherwise. While only one definition of the term "cycle" was given in the article in question, another eminent authority defines a cycle as "a period or revolution of events." In the case of the two cycle motor the event is complete in one revolution of the crank shaft, while with the four cycle it takes two revolutions to complete the event. The Gas Engine suggests the use of "Otto" cycle and "Clerk" cycle. With regard to the latter Dugald Clerk was not the progenitor of the two cycle engine in use to-day, but of the form known as the displacer piston engine, in which an auxiliary pump or piston was used to force out the old and compress the new charge. This type of engine was never much of a success, either in the country of its birth or in America. To Clark Sintz, of Grand Rapids, Mich., should be given credit for the introduction of the two cycle engine, and the two forms could be properly called, as they have already been in England, the "Otto" cycle and the "Sintz" cycle. It may be added that the Sintz type of two cycle engine is more extensively used than any other form, while the Clerk type is practically a thing of the past.

TOURING PREREQUISITES.

While an automobilist may hesitate over attempting his first tour, he needs little urging to take the second. He comes back to the city after a two or three weeks' trip sunburned and probably in need of new outfits all around, but withal a satisfied creature, with experiences which the lounge at the seashore or in the mountains cannot duplicate.

A touring party should consist of from two to four persons of like dispositions and tastes. Whether it be 50 miles or a thousand, and no matter how much or how little time is available, there should be no fixed schedule. An inflexible plan takes away much of the enjoyment of any trip in which it is allowed to have a part. Better by far to go only a portion of the distance originally planned than to transpose a pleasure trip into a forced march.

Unconventionality is the one indispensable requirement of a pleasant tour. The one who will go 10 miles or 200, as the spirit grows, who is not afraid of "wasting" time when in the midst of attractive scenes, who will arise before the sun when the idea grows upon him and mow down the miles before the day is advanced, or rest at midday and cover a considerable distance after dark is the one who will best enjoy his tours.

One who keeps strictly to the main road may travel much and know little of the country through which he passes. The through highway is, after all, hardly more than an artery helping to feed the cities along its line. The road traveler uses it because it leads out from the city and gets him into the open country in the easiest way. But upon the good side-roads, which one passes by so often without thinking, there is usually something to repay for the time and trouble which an exploration would require.

ANSWERS TO CORRESPONDENTS.

Chicago, Ill.—Editor MOTOR AGE: I have a gasoline automobile which I am thinking of entering in the forthcoming speed contests at Joliet. It weighs about 1,000 pounds, and has a 12 horse power motor. Can you inform me which class my machine would be eligible for with the above weight and horse power?—J. A. T.

On general principles it would not be classified, as the horsepower per 100 pounds of weight would be 1.33, and is above the limit set by the committee.

Rules of the Road.

Wyndmoor, Pa.—Editor MOTOR AGE: In the August 28th number of your issue, on page 11, under rules for the New York-Boston reliability test, rule XIX, you state: "All vehicles passing other vehicles going in the same direction must pass to the left in accordance with the rules of the road." Is this the rule of the road and is this the law? A and B have had a discussion regarding this question. A claims that the right is the proper side to pass when passing or meeting a vehicle. B claims that when meeting a vehicle you pass to the right; when passing a vehicle, both going in the same direction, you must pass to the left. A claims that the law of the road is "always to the right."—Russell Bowen.

The rule of the road, based, of course, on the law, requires a vehicle meeting another to pass to the right, and, on overtaking another, to pass on the left. The leading vehicle, to comply with the law, must be on the right, hence the one overtaking it must, of necessity, turn to the left.

Operating a De Dion Coil.

Canton, O.—Editor MOTOR AGE: My gasoline automobile is equipped with a genuine De Dion coil operated by four cells of dry battery. The coil does not give satisfactory results, no matter how I adjust it. Can you inform me as to where the trouble lies?—F. A. S.

The genuine De Dion coil is made especially to be used with a storage battery of the firm's own make, and will not give satisfactory results with any form or number of dry batteries. It can, however, be operated successfully with a three-cell storage battery of any reliable make.

Two-Cylinder Cycle Motor Wanted.

Santa Clara, Cal.—Editor MOTOR AGE: I would like to know whether there is a 2 cylinder air cooled motor made which could be practically attached to a tandem; one that would develop from 3½ to 4½ horsepower. You would oblige me very much by giving me this information.—W. F. B.

Manufacturers of such motors may address W. F. Bracher, Santa Clara, Cal.

Relates Experiences for Others' Benefit.

Owen Sound, Ont.—Editor MOTOR AGE: I should like you to take up the different methods of ignition, viz., dry cell, storage battery and generator dynamo. In my own case my engine is double cylinder, using jump spark, with current generated by four to six dry cells. My spark coil is duplex, but without vibrator. I would like to know what amperage I should have from battery to get best results. I have had practically only two troubles with my car this summer, and I mention them only because I have never noticed them referred to in MOTOR AGE. My first was the battery, having, perhaps, one or two dead cells in the series, reducing the amperage on account of internal resistance as low as 2.5. This would give a spark, but very weak, and would only explode a weak mixture of gas.

I bought an ammeter and now occasionally test each cell separately and now have no further trouble. My second trouble was in the carbureter. It is of the float feed style and on most damp days would not run more than 5 or 10 minutes before stopping. I found that the moisture in the air was precipitated upon reaching the cold zone just above the entrance of gasoline and would then flood the fine brass net below, choking off air supply and inducing an excess of gasoline. The remedy for this was to take the air warm enough to prevent the precipitation of moisture.—Alf. J. Frost.

The suggestion relative to ignition troubles will have attention shortly.

Climbing Grades on Motor Bicycles.

Clinton, Ia.—Editor MOTOR AGE: Could you kindly inform me about what grade a 2½ horsepower De Dion motor bicycle should climb? I notice reports in different papers of motor bicycles ascending grades as steep as 1 in 8. Was this done without the use of pedals?—T. H. A.

A 2½ horse power motor bicycle should climb a grade of at least 1 in 12 easily, but as to the steeper grades it would be doubtful unless under exceptionally favorable conditions. The motors mentioned were either of higher power or had a reduction gear for hill climbing.

Questions on the Gas Engine Series.

Waukegan, Ill.—Editor MOTOR AGE: In your last issue you tell us that your interesting A B C series is ended. You then invite questions. Here are mine: 1—Is it good practice in a two-cycle engine to make the crank chamber intake a port uncovered by the piston at the end of its out stroke in place of the usual check valve? 2—How is the actual horsepower of a two-cycle engine figured? 3—If you have not a convenient formula can you tell me what percentage of the calculated horsepower we may expect this type to show? If the information asked for is not of general interest a brief letter will greatly oblige your appreciative subscriber, N.

1. It is not good practice and not at the present in use, at least not on any up-to-date two-cycle engines. It has two disadvantages; first, that a partial vacuum is formed in the crank chamber, producing from 2 to 3 pounds back pressure or vacuum on the piston; 2—that at a high rate of speed the crank chamber does not draw in a full charge on account of the limited time allowable for the opening and closing of the port. 3—the same as a steam engine or a four-cycle gas engine, but the term actual horsepower as used by the writer is rather ambiguous. Horsepower is of three classes; calculated, indicated and brake. The first is simply theoretical; the second represents the actual conditions within the cylinder, without taking into account the losses from friction; the third is the actual or delivered brake horsepower at the motor driving shaft.

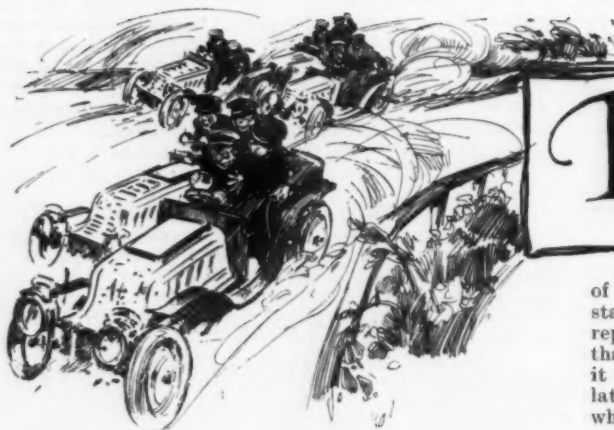
The calculated or theoretical horsepower formula, deduced from the result of actual tests, is as follows:

$$H. P. = \frac{D^2 \times S \times R}{21,600}$$

D is the diameter of the cylinder and S the stroke of the piston, both in inches, and R the number of revolutions of the motor per minute.

Two-Cycle Motor Dimensions.

Omaha, Neb.—Editor MOTOR AGE: I am thinking of building a two-cycle or valveless form of gasoline motor, 3½ inches bore and 4 inches stroke. Can you give me the dimensions of the inlet and exhaust ports, their proper location with regard to the end of the piston stroke, the weight and diameter of the fly wheel and speed, and horsepower that the motor is likely to develop.—C. B. W.



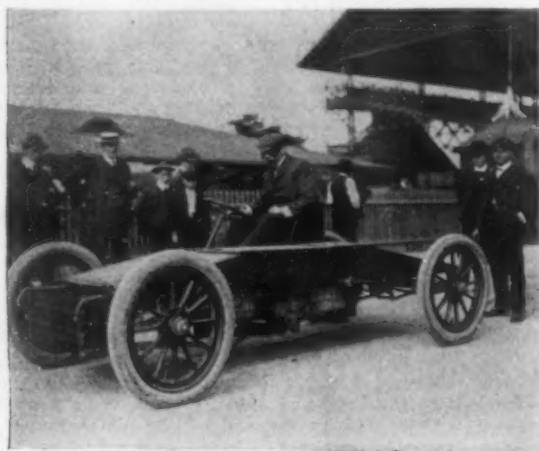
RACING

A disappointed crowd of automobile enthusiasts thronged the lobby of the Russell House and W. E. Metzger's store at Detroit last Friday morning. It was a representative gathering, including contestants and would-be spectators from Boston, New York, Syracuse, Buffalo, Cleveland and Chicago. It is probable, indeed, that had all gone well it would have been a splendid representative gathering. Rain commenced to fall heavily on Thursday morning and continued incessantly until late Friday night. It would have been impossible to have raced under these conditions, and late in the day it was announced that the meeting had been postponed until Monday and Tuesday of next week. Several of the racing machines which had taken part in the Cleveland events on Tuesday had been shipped to Detroit. Of these the two Wintons were taken to Providence, where they will compete today. They will then be taken, by special car, direct to Joliet. Mr. Harkness' Mercedes was shipped direct from Detroit to Joliet.

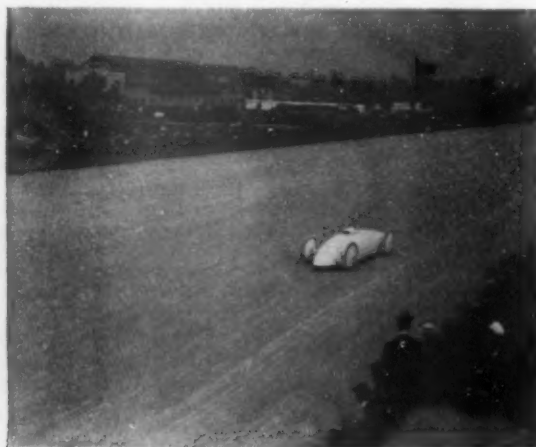
During the day Mr. Stewart, chairman of the racing committee of the American Automobile Association, met a number of western men and discussed with them some

of the peculiarities of the racing rules as they now stand. Mr. Stewart agreed that the west ought to have representation on the committee, and stated his belief that while the rules needed a great deal of amendment, it would be unwise to undertake anything of the sort so late in the season. There are two vacancies on the board which, Mr. Stewart said, would undoubtedly be filled by western men on the recommendation of the western clubs.

During a conversation at Detroit last Friday Mr. Stewart asserted that under no circumstances would the racing board consider the separation of amateur and professional operators until the season's racing is over. The people who are agitating this question surely cannot have given it thought or else are careless of the ultimate fate of automobile racing. For the last 2 years we have seen clubs promote and the public attend exhibitions, called by courtesy automobile races, and in all that time we have never seen even a reasonably good contest. Paucity of entries and the impossibility at this early stage of properly classifying the vehicles have made this condition inevitable. What automobile racing needs above all other things is numbers of competitors. Given sufficient competitors it will be possible to change the classification and obtain very much closer racing than we now have, though it will never be possible to obtain the best results until an entirely new system of classification has been devised. It will be necessary to distinguish between the racer and the roadster and to take power, as well as weight, into consideration. If under existing conditions we cannot secure reasonably



Winton and the Pup.



The Baker Torpedo.

good racing, what on earth would happen if the fields became still more emaciated by a division of the available talent into two classes? If the agitators will devote their time to a discussion of methods of classification they may between them develop something of real interest and value. The amateur question is and always has been a troublesome thing in all forms of sport, but it can hardly be said that there is any need of hasty action in connection with the automobile.

Mr. Stewart is said to favor a rule providing for a fine of a person who enters a race and fails to compete. Therein we believe Mr. Stewart errs. The fault is too often with the race meet promoters, who, in order to obtain a good list of entries, urge people to compete and secures half-way promises to do so. If on the other hand the promoter insisted on compliance with the rules and the payment of entry fees there will be fewer absentees. A man does not usually pay from \$3 to \$10 for an event unless he intends to take part in it. If the amateur spirit is to prevail at least a majority of the competitors must be amateurs in spirit as well as in name. Men who are amateurs will not submit to be treated as employees. They expect to take part in races for the sport they and others obtain from it, and the matter of gate receipts is, to them, a secondary consideration. In dealing with professionals who compete for the money to be obtained there may be some better excuse for a fine for non-appearance, inasmuch as there is no pretense between them and the promoter of anything more or less than a contract for the gain of one or both. Even in this case, however, the proposal will appeal to many as being un-American and a relic of the days of slavery.

The success of the Cleveland meet from the standpoint of public attendance was simply remarkable. The admission fee was \$1, which amount was paid by a few more than 8,600 people, so that the event was profitable to the promoters. So far as the actual conduct of the events was concerned the meeting was a decided improvement over that at Brighton Beach, and showed that with competent officials to take charge of them races can be run off satisfactorily and with little unnecessary loss of time. The Cleveland race meet, however, could never have been made a success by strict adherence to the racing rules. Happily the meeting enjoyed the services of a number of veteran cycle race meet officials to whose efforts the improvement was due.

The meeting furnished an opportunity for Mr. Harkness to demonstrate how thorough a sportsman he is. In the event for 2,000 pound machines he ran his machine against the new Winton to prevent a walk-over, but without the slightest idea whether his car came within the limit of weight or not. After the race, which he won, he ran his machine to the scales and found that it was above the limit. In his contests with the Winton Bullet he knew he would be, and was, hopelessly beaten, but despite that fact he turned out for every event in which he was entered. But for his appearance some of the races of the meet would have been uninteresting.

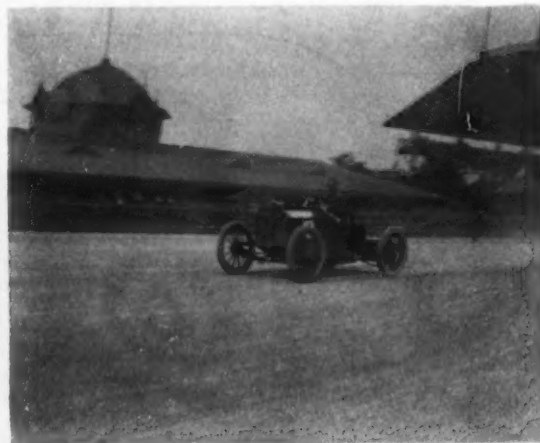
After the Cleveland meeting Mr. Harkness shipped his machine to Detroit and there by removing part of the body and other fittings got the machine down below 2,000 pounds. Unfortunately it proved an unnecessary expenditure of energy. The incident serves to illustrate the absurdity of classification by weight. At Cleveland the Mercedes, weighing 2,250 pounds, beat the Winton Pup, but was disqualified. Then it was shipped to Detroit where it is stripped of 300 pounds of its weight without sacrificing an ounce of power, making it, of course, a faster machine and yet eligible to compete in the 2,000 pound class.

One of the features of the Cleveland meeting was an exhibition by the White steamer, which traveled 5 miles in 6:43, or at an average speed of about 1m. 21s. per mile. It was a splendid performance, but not in accordance with the rules, for the reason that a passenger was carried, who kept a pump at work during the greater part of the journey. This question of passengers is one which should be settled at the earliest possible opportunity. It seems ridiculous to insist on the carrying of a passenger unless he is permitted to work. It would be just about as sensible to force the owner to carry 150 or 200 pounds of dead weight. If the rule to the effect that one man must have exclusive control of the machine is to be enforced, as it was at Brighton Beach, was not at Cleveland, and will be at Joliet, it would be well to remove temptation and provide that no passenger shall be carried.

Automobilists who saw the Cleveland races are convinced that Mr. Winton has by no means demonstrated the full speed capacity of the Bullet and are convinced that if the Joliet track is in good condition, or whenever he may ride upon another thoroughly good track, he will have no difficulty in covering a mile well inside of



Rollin White in the White Racer.



Harkness and His Mercedes.

The engine, whose power has not been tested, is connected directly with the rear axle. 750 revolutions are necessary to a mile, and the makers have never yet succeeded in running the engine in the shop at less than 650, so that in case they desired to make a trial it would be necessary to have the machines hauled to the track. No trials have yet been made, however. An effort was made to arrange for an exhibition at the Detroit meet, but the owners of the machines and the promoters of the meet were unable to agree. No arrangements have yet been made to make commercial machines. The engine, which has four cylinders, is expected to develop 100 horsepower.

French Records Proved Incorrect.

The alleged records made at Decauville, France, have been shown to be all a huge mistake. One time-keeper was stationed at each end of the course, their watches having been compared in advance. After the times of the trials had been announced it was discovered that there was a difference of 6 seconds between the watches, one of them, apparently, having stopped after the comparison was made! If French records are to be timed in this crude style, and with but one timekeeper at either end of the course, the world will hardly accept them as satisfactory.

Machines Taken Abroad Re-enter Free.

The following notice has been issued by Secretary Butler, of the A. A. A. and Automobile Club of America:

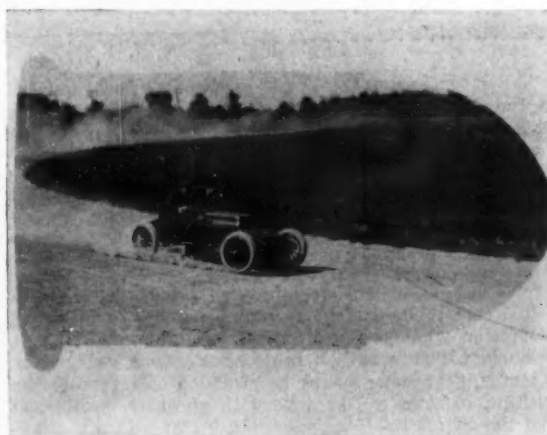
Through the efforts of the American Automobile Association and the Automobile Club of America the matter of the importation and exportation of automobiles into and out of this country under the present ruling of the treasury department stands as follows:

That an American built automobile may be taken abroad and, provided it has not been advanced in value or improved in condition by any foreign made attachments, may be brought back again free of duty. An owner desiring to take his American built automobile abroad should obtain from the custom-house at the point of departure an outward bound clearance. Before returning to this country he should obtain from the United States consul at the point of departure an inward bound clearance and a declaration made before the said consul of the fact that the automobile was exported from the United States and that it has not been advanced in value or improved in condition by any process of manufacture or other means. Failure to comply with the foregoing requirements will render the automobile on importation subject to the same duty as those of foreign build.

That an automobile of foreign manufacture having been brought into this country and duty paid at the time of importation may be taken out of the United States for use abroad and is exempt from duty on re-importation, provided it has not been advanced in value or improved in condition while abroad. An owner desiring to take his foreign built automobile abroad should register it at the custom-house before it is taken out of the United States and furnish satisfactory evidence that the duty was properly paid at the time of the first importation. Application should be made personally and can be made without the interposition of a custom-house broker. A certificate will thereupon be issued to the owner and upon its return the automobile, fully identified, will be admitted free of duty.

That the regulation permitting the free entry of bicycles of tourists brought into this country for temporary use, not exceeding three months, has been extended so as to include automobiles brought by tourists from abroad for a stay of not exceeding three months. In such cases formal entry is required, a careful exami-

nation and appraisalment is made at the point of importation, and a bond satisfactory to the custom authorities, with penalty in double the estimated duties, must be given by the importer, providing for the due



Winton and the Bullet Making Records.

exportation of the automobile covered thereby within three months from the date thereof, when such bond shall become null and void; otherwise to remain in full force. American citizens traveling abroad are not regarded as tourists by this regulation, and its provisions do not apply to them.

It should be remembered that the above are the present rules and regulations of the treasury department and that they are liable to change without notice. We would suggest that while these rules are now in force, yet if occasion should arise to act under them some months hence it would be well to make inquiry as to how the matter then stands.

American Machines in English Test.

Of the seventy vehicles which started in the English reliability trials, the preliminaries of which were described last week, forty-six finished. Only two secured an absolutely perfect record,—a White steamer and a 20 horsepower Wolseley. There were four Locomobiles in the test and all finished, scoring an average of 1,735½ out of a possible 1,800 points. One of the White's, as stated, scored 300 points each day. The other lost only six points the first and four the second day, its record for the last four days being perfect.

Double Victory for Chauchard.

Paris, France, Sept. 20.—The automobile races in Provence this week resulted in a double victory for Paul Chauchard with a 70 horsepower Panhard. On Sunday he covered 150 kilometres in the Criterium de Provence, near Arles, in 65m. 13s. On Tuesday in a hill climbing contest on Mont Vontoux he made 72 kilometres in 27m. 13s., the average ascent being 8 per cent. Many of the grades of the route were extremely sinuous.

Late Entries for Reliability Week.

NEW YORK, Sept. 22.—Fifty entries in all have been received for the reliability run. The latest are F. A. La Roche's 16 horsepower Darracq, S. G. Averill's Franklin, and three Knox machines. The entries close on Thursday.

Catechism of the Automobile Steam Engine and Boiler.

The invention of the steam engine has been ascribed to the Marquis of Worcester and the date has been fixed at the middle of the seventeenth century. The French, however, claim Papin as the inventor toward the close of the same century. The first actual record of a working steam engine is that of Savery, an Englishman, to whom a patent was granted in 1698. James Watt was the first person to perfect and put the steam engine into practical use as a prime mover or source of motive power. That was in 1782.

It is necessary in a steam engine for use in an automobile that it shall start as soon as steam is admitted, no matter what the position of its cranks may have been when it stopped. It is necessary, with every form of motor, that some means be provided of reversing the machine. If this can be done with no other mechanism than the engine itself, so much the better. This a steam engine accomplishes. The claims of superiority of the steam engine over the gas engine are based largely on these two qualities.

Engines used in automobiles are of what are known as the vertical two-cylinder marine type, which form will be herein illustrated and described. It is practically two engines, each complete in itself, but so connected and with cranks placed in such position with

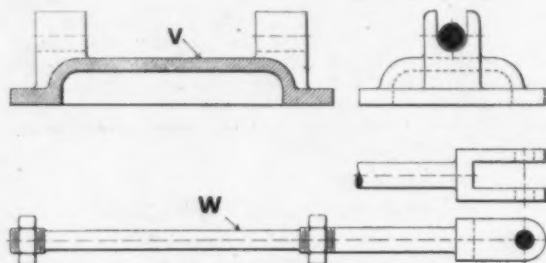


Fig. 2.

relation to each other that one of them will invariably start when steam is admitted to the cylinder, an accomplishment manifestly impossible if but one cylinder were used. The reversing action is accomplished by the use of what is known as the Stephenson link motion, which operates the valves so that steam is admitted to such part of the engine as may be necessary to accomplish the desired end.

While a steam engine is generally classed as a source of motive power, it is really simply the mechanism used for utilizing the expansive force of steam which has

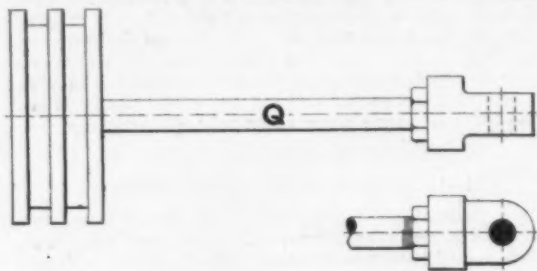


Fig. 3.

been previously produced in some suitable form of generator, commonly known as the boiler, but which would be more correctly described as a steam generator.

Before going into the details of the construction and operation of the steam engine for an automobile, the principal working parts and their relation to one another will be illustrated and described, showing the engine complete, partly in full view and partly in section, so that an understanding of its construction may be obtained.

Fig. 1 is a side elevation, the left-hand half being a full outside view and the remainder a partial vertical section on the center line of the cylinder, showing the valve, valve rod, steam chest, exhaust and admission ports, piston and piston rod. A reference table accom-

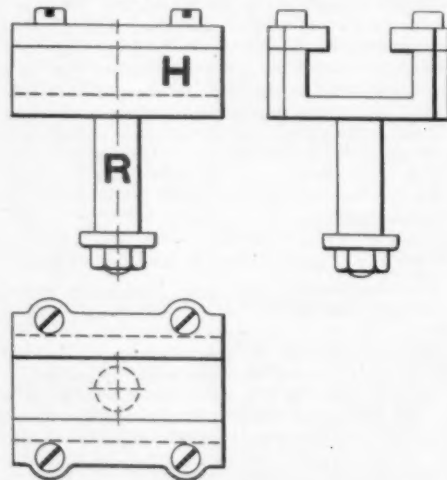
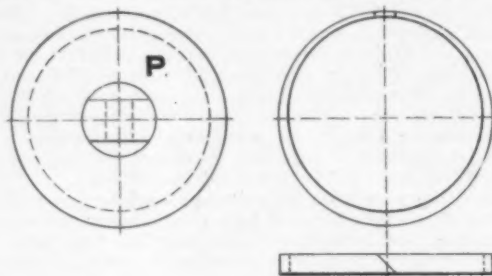


Fig. 4.

panies the drawing and shows the name of each part. The engine is double acting; that is to say, steam is admitted first at one end of the cylinder and then at the other, so that the expansive force of the steam is utilized in both directions.

The mechanism by which steam is admitted to the cylinder is known as a slide valve. It opens the inlet ports, first at one end and then at the other. It is shown in detail in Fig. 2, which is a side sectional elevation and an end view. It shows the lugs in which the valve rod W is fitted and which is held thereto by the nuts shown on the left end of the valve rod. Their position may be seen at a glance by reference to Fig. 1. Two kinds of valves are in use on automobile engines, that most commonly used being the D valve, the one here illustrated.

The piston of a steam engine consists of a short cylinder whose length is generally about one-third of its diameter, and which is generally made a trifle smaller in diameter than the bore of the cylinder. A



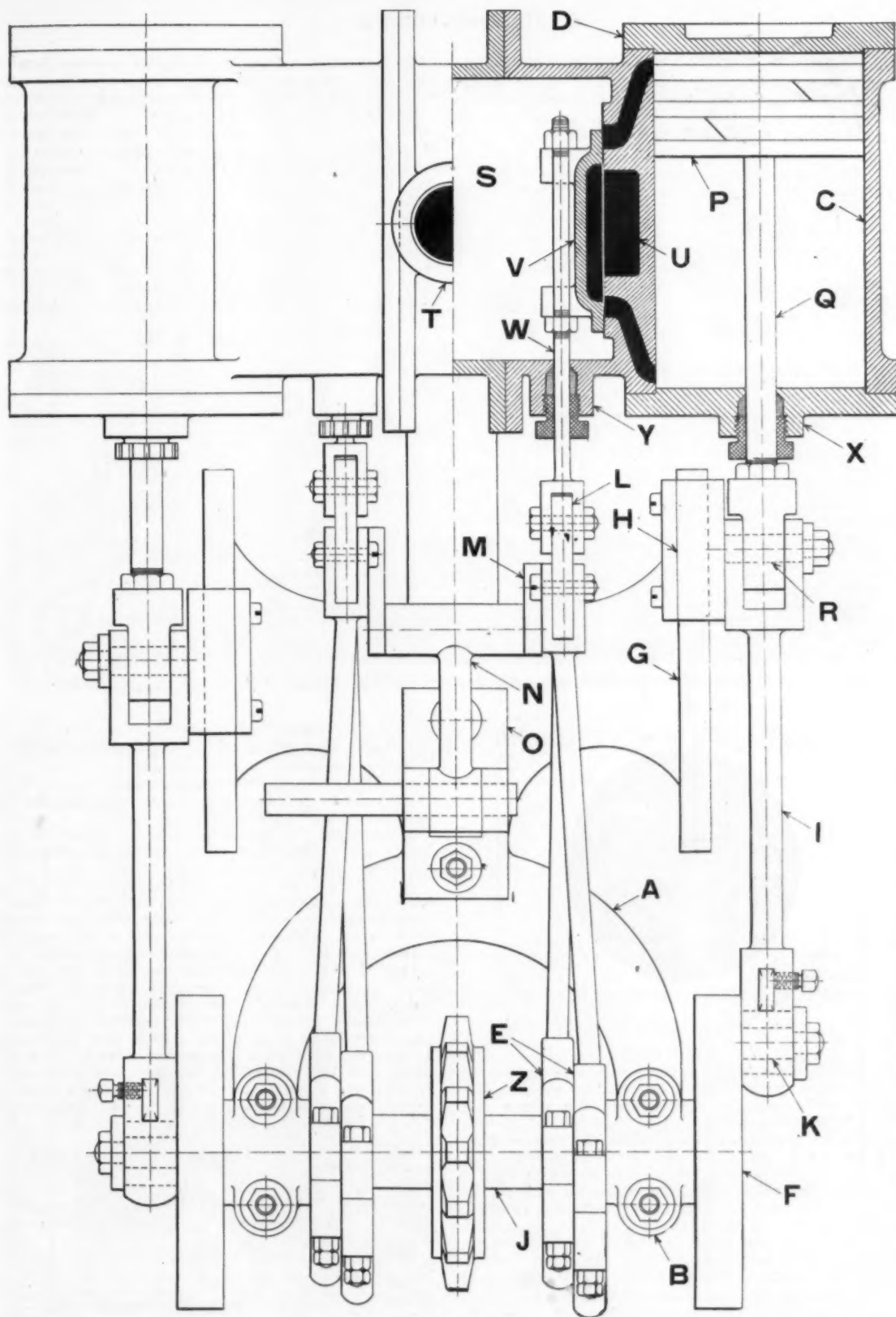


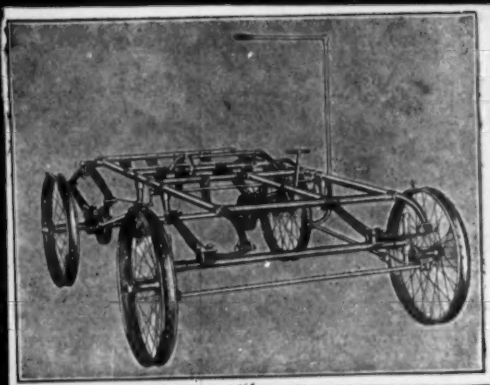
Fig. 1.

A—Engine frame. B—Crank shaft bearing. C—Steam cylinder. D—Cylinder head. E—Eccentrics. F—Crank. G—Crosshead guide. H—Crosshead. I—Connecting rod. J—Crank shaft. K—Crank pin. L—Reversing link. M—Radius rod. N—Reversing lever. O—Reversing lever bracket. P—Piston and rings. Q—Piston rod. R—Cross head pin. S—Steam chest. T—Steam pipe connection. U—Exhaust. V—Slide valve. W—Valve rod. X—Piston rod gland. Y—Valve rod gland. Z—Driving sprocket.

HERCULES RUNNING GEARS

For Electric and Gasoline Vehicles

There are
no weak spots
in these gears.
Original design;
sound
construction.

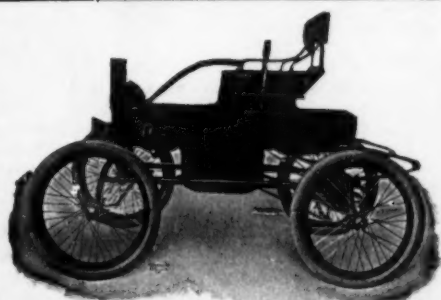


We supply
parts of these
gears to concerns
desiring to
modify our
construction.

FEDERAL MANUFACTURING COMPANY
SMITH STAMPING FACTORY
Milwaukee Wisconsin

THE BAKER

IF IT'S A BAKER IT'S THE BEST
The Most Efficient of all Electric Vehicles



THE LIGHTEST WEIGHT
THE STRONGEST MADE
THE BEST FINISHED



We will send you a Catalogue, or we will write you. Address
The Baker Motor Vehicle Co.,
CLEVELAND, OHIO



Above machine fitted with Single Cylinder, $5\frac{1}{4}$ x 6 Engine.
Tonneau in rear detachable.

DYKE

THE LEADING AUTO PARTS
MANUFACTURER OF AMERICA

CASTINGS and PARTS to build this
machine, or

PARTS FINISHED ready for assembling.
Have you read about the trip with one of
our No. 1 Outfits? Write our customers
what they think of them. Dyke makes

Radiators, Pumps, Running Gears,
Engines, and handles and carries in
stock everything in the auto supply
line. Get his new Catalogue Supplement.

We also sell the castings of our Gasoline
Engines from $1\frac{1}{4}$ to 12 h. p. Dyke's
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Carbureter, Dyke's Mufflers, etc., etc.

A. L. DYKE,

1402 Pine St., ST. LOUIS, MO.
(Originator First Auto Supply Business in America.)

What Gaineth a Man with a High Speed Machine on American Roads.

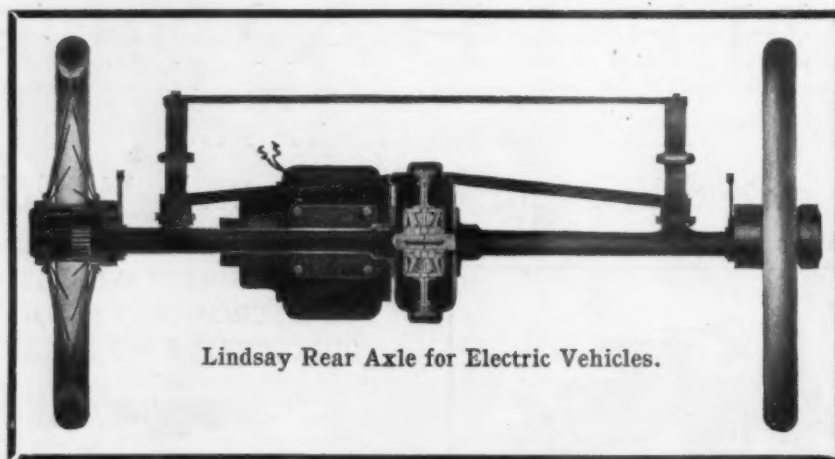
Medium
Speed
vs.
High
Speed

Jones bought a high powered, multi-
cylinder machine.
Smith bought parts of Dyke's No. 1
Outfit and built a Dyke Tonneau.
Jones' machine was capable of 40 miles
an hour.
Smith was geared for only 18 or 20
miles at the highest.
Jones had trouble—trouble—trouble.
Cause—American roads; too much

speed; too much engine; temptation to
"let 'er out" too great—roads would not
permit such speed.
Smith would ride—ride—ride.
Cause—Single Cylinder Engine of
Dyke make. Head-cylinder all in one
casting; no packing to blow; only one
oil cup; plenty power to go where de-
sired; speed geared to rate that Ameri-
can roads will permit. Economy,

few parts to care for; not so much
wear and tear; simplicity.
Jones says only place a high-speed
machine is suitable for is the track.
Smith is still riding; taking it easy,
and making as big a show as the Red
Devils, Blue Devils and the rest of
them.
Moral: Plain facts—racing should be
confined to the track.

This is the Gear that Lindsay Makes



Lindsay Rear Axle for Electric Vehicles.

If you want an up-to-date outfit, get our catalogue and prices. It is certain that no mechanical device has ever met such wide and instant recognition as our Tubular Rear Axle, with differential and live shaft without end thrust or friction, for Electric Automobiles. Don't forget the address,

Lindsay Automobile and Parts Co.
INDIANAPOLIS, INDIANA

INDUSTRY

San Francisco, Cal., Sept. 20.—Manager C. A. Hawkins of the White branch of the Pacific reports the arrival from the White factory of Walter Grothe to take charge of the mechanical work. The newcomer has heretofore been associated as assistant with the superintendent of the Cleveland factory.

The mobile agency of the Pacific is putting on a freshening-up appearance under the superintendency of its new manager, Frank E. Hartigan, who arrived here last week from the Mobile's New York field of operation. He is taking hold with a vim that portends increased business activity for this far west branch of the Mobile brand industry.

Manager E. P. Brinegar, of the Automobile Co. of the Pacific, started this week on a visiting trip to the district agencies of his south coast territory, where machine selling is well to the fore in activity. The recent addition to the headquarters agency in this city of automobile accessories is proving a growing business far in excess of anticipations.

The announcement is made by Mr. Lazerlere, late local manager of the Mobile agency, that he has leased store

215 Battery-street, and with an abundance of financial strength back of him, will soon be ready for business with his store well stocked with the highest priced automobiles.

One of Chicago's Pioneers.

Three years ago a maker of bicycle parts on a small scale, two years ago an experimenter with toy motors, today proprietor of three automobile stations, all doing a thriving business. Such is the record of A. C. Banker. Years ago Banker was a cycle racer of renown and conducted a New York store with a partner named Campbell. Then he came west to defeat the western champions. He failed in that, but decided to remain in Chicago. He went through the cycle boom, gathering experience. When the new opportunity came he seized it at once, opened a storage station at Thirty-fifth street and Grand Boulevard, added another on Plymouth place for the benefit of downtown customers, and finally secured part of a store in the automobile colony at Fourteenth street and Michigan avenue. He handles



the Haynes-Apperson, Peerless, Darracq and Gasmobile, apparently to the satisfaction of the makers. His stations are always full. He is a member of the Chicago Automobile Club and one of the Banker family, of Pittsburgh, whose success in the automobile trade has made them famous. Banker is considered one of the finest operators in the west.

Late Issues from the Patent Office.

No. 708,053, to A. C. Krebs, of Paris, France, assignor to Panhard & Levassor, of same place, covers a commutator for distributing the primary current in multicylinder motors. The device is simply a disk of conducting material with a metal segment adapted to alternately contact with brushes connected with the several coils, of which there is one for each cylinder.

No. 708,231, to Charles W. Hunt, of West New Brighton, N. Y., covers a running gear for heavy vehicles, particular attention being given to the matter of steering. Three pairs of wheels are used with their respective axles connected by diagonal reaches so connected that the movement from a straight line of the leading pair of wheels compels the others to conform to the same circle.

No. 708,356, to H. H. Hennegin, of St. Louis, Mo., assignor to International Motor Co., of same place, covers a combined driving gear and brake. The driving apparatus is of the friction type and arrangement is made for moving the driven member to or from the driving member and a fixed brake shoe is so located that a continuation of the movement of the driven member from the driving disk will bring the driven member in contact with the brake.

No. 708,460, to James H. Bulard, of Springfield, Mass., assignor to Overman Automobile Co., covers a flue construction for steam carriages which comprises a chamber surrounding the boiler and through which the exhaust steam escapes to the air carrying with it the products of combustion.

No. 708,482, to T. B. Jeffery, of Kenosha, Wis., covers a pneumatic tire for vehicle use the distinguishing feature of which is that the outer casing is made in two parts forming the tread and the inner face of the tire. These parts are held together by two metal bands at the sides of the tire into which the adjoining edges of the casing are held by means similar to that employed in holding detachable tires to the rim. Another feature of the tire is a non-elastic strip laced within the tire for the purpose of securing the inner member of the casing to the rim.

About the Gasmobile Plant.

The gentlemen who purchased the plant of the Automobile Co. of America for \$100,000 represented V. E. Macy, J. H. Flagler and S. D. Ripley, doubtless the same gentlemen who offered to buy the plant for the same amount of money at private sale, but which sale the court declined to sanction. The receiver had been preparing for the manufacture of the Rochet-Schneider machine, but it is now doubtful whether it will proceed with that line, Mr. Flagler having demonstrated the practicability of a new type of electrically shifting, clutching and governing the mechanism of an automobile to such an extent that a machine of that type will probably be

manufactured. It is said, however, that the Rochet-Schneider may be manufactured independently by one of the gentlemen above mentioned.

Searchmont Workers Inspect New Home.

The Fournier-Searchmont Automobile Co., having outgrown its factory in Philadelphia, recently purchased a large tract of land, including the Trainer mills, at Trainer, Pa. The necessary changes are being made, and the company will begin to move in about 2 weeks. Trainer is 3 miles from Chester, Pa., and 16 miles from Philadelphia. The company wished to show the new plant to its men, and chartered a special train and Saturday afternoon took a large number of employees to look over the property. The men looked over the buildings and land on which the company will erect houses and surroundings, and returned to Philadelphia on the spe-



THE SEARCHMONT TRAIN.

cial. The accompanying picture gives an idea of the train and its occupants.

The Lobee pump, here illustrated, is, as agreed by every one who has given it a thorough trial, one of the most satisfactory and durable on the market. It will circulate at from 50 to 800 revolutions, or even more, and is so simple in construction that it is difficult for anything to get out of order. The manufacturers, the Lobee Pump & Machinery Co., of Buffalo, N. Y., will be glad to furnish any further details required.

Entirely Electrically Controlled.

One of the new cars which will be entered in the New York-Boston run and about which little or nothing has appeared in print is the product of a Jersey City, N. J., concern, backed by several prominent men, and given the temporary name of the Pedro Experimental Co. The machine has many good features, among which are mechanical inlet and exhaust valves and electrically controlled speed clutches which are operated by buttons on the steering wheel. There are three speed clutches, each operated by a dynamo connected with the engine, and operated by the buttons, thus doing away with all levers and avoiding the necessity of removing the hands from

NOTWITHSTANDING

The long distance, and, above all, the great difficulties of bad mountain roads in Switzerland and Austria, the

**Light
Darracq
Vehicles**

figured brilliantly in the Paris-Vienna Race

The Darracq Breaks all American Records

From 1 to 5 Miles

FOR LIGHT VEHICLES. AT THE RACES OF THE LONG ISLAND AUTOMOBILE CLUB, THE DARRACQ AGAIN PROVED A WINNER



Taking **FIRST PLACES** and establishing records as they usually do; but most noteworthy is the fact that in the General Classification the light Darracq vehicles are third and fifth.

Beating Twenty Heavy Racing Machines. . . .

Proving not only that the Darracqs are the fastest, but are also superior to the Mastodon Racers in Endurance, Reliability and Regularity.

IMMEDIATE DELIVERY.

**AMERICAN
DARRACQ
AUTO. CO.**

652 Hudson St., near 14th St. El. R. R. at 9th Ave.
NEW YORK

F. A. LaROCHE, Gen. Sales Mgr.

SECOND

EDMOND, - - 16h., 12m., 30s

THIRD

BARAS, - - 17h., 17m., 52s

FIFTH

HEMERY - 17h., 28m., 28½s

SIXTH

MARCELIN, - 17h., 45m., 18s

NINTH

COLLIN, - - 19h., 19m., 35½s

Also in the Voiturette class,

FIRST

GUILLAUME - 18h., 54m., 50s



THE OLDSMOBILE

**Blue Ribbon Winners Chicago Endurance Run
The Oldsmobile in the Front Ranks**

Conclusively demonstrating its staying powers and ability to travel rough roads, with a minimum consumption of gasoline. Why spend thousands for a ponderous racer when you are unable to buy a better or more reliable vehicle at any price?

PRICE \$650.00 F. O. B. DETROIT.

SELLING AGENTS:

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Oldsmobile Co., 1124 Connecticut Ave., Washington, D. C.
Quaker City Automobile Co., 123 N. Broad St., Philadelphia, Pa.
H. B. Shattuck & Son, 223 Columbus Ave., Boston, Mass.
Banker Bros. Co., East End, Pittsburgh, Pa.
Oldsmobile Co., 411 Euclid Ave., Cleveland, O.
W. E. Metzger, Detroit, Mich.
Ralph Temple & Austrian Co., 253 Wabash Ave., Chicago, Ill.
Fisher Automobile Co., Indianapolis, Ind.
Olds Gasoline Engine Works, Omaha, Neb.
W. C. Jaynes Automobile Co., 873 Main St., Buffalo, N. Y.
Day Automobile Co., St. Louis and Kansas City, Mo.

George Hannan, 1455 California St., Denver, Col.
Clark & Hawkins, Houston, Tex.
Hyslop Bros., Toronto, Canada.
Manufacturers' Co., 26 Freemont St., San Francisco, Cal.
A. F. Chase & Co., 215 Third St., Minneapolis, Minn.
Oldsmobile Co., 725 National Ave., Milwaukee, Wis.
Rochester Automobile Co., Rochester, N. Y.
F. E. Gilbert, Jacksonville, Fla.
Texas Imp. & Mach. Co., Dallas, Tex.
Abbott Cycle Co., New Orleans, La.
C. H. Johnson, Atlanta.
Sutcliffe & Co., Louisville, Ky.
Brown-Thompson & Co., Hartford, Conn.
Mason's Carriage Works, Davenport, Iowa.

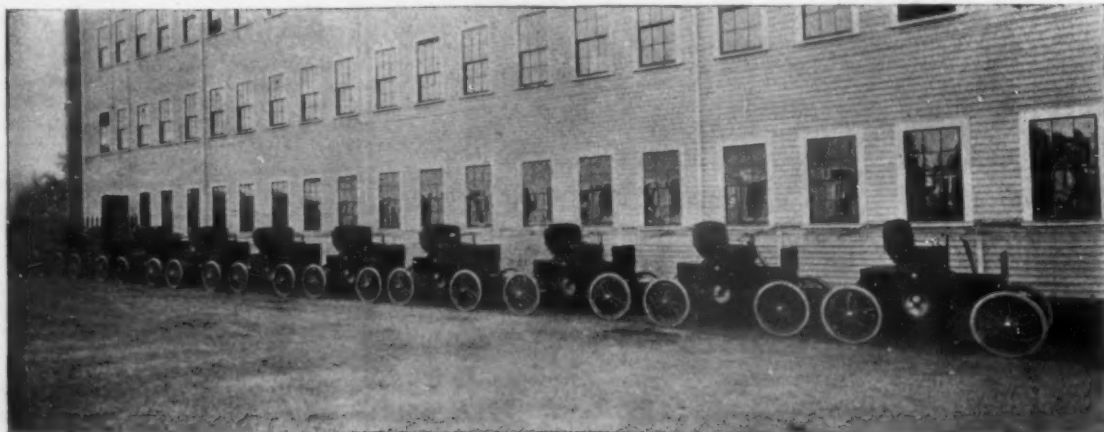
OLDS MOTOR WORKS,

50 CONCORD AV.,

DETROIT, MICH., U. S. A.

ORIENT RUNABOUTS

8 H. P. WEIGHT 1,000 LBS. PRICE \$875.



The above shows a row of Orient Runabouts just after they have been tested and inspected, and are standing awaiting shipment. Several of these carriages developed a speed on the road in testing of over 35 miles per hour, and climbed grades exceeding 36 per cent, with full load. We have now several lots coming through our works and can make prompt shipment.

WRITE FOR CATALOGUE.

WALTHAM MFG. CO.,

Waltham, Mass.

the steering wheel while running. The motive power consists of a two 5½x6 cylinder vertical motor and is said to develop 20 horsepower. The machine has been running around New York for several months and at a recent trial on the Guttenburg track went at the rate of 35 miles an hour.

New Kerosene Burner.

The Hydroleum Co., Limited, of England, has recently equipped a Locomobile type of steam car with its new kerosene burner. With this new burner it is said that the full steam pressure can always be kept up, no matter what the demands of the engine. A steam car equipped with this burner recently made a trip of 600 miles, carrying four persons. The average cost of kerosene was 2 cents for 10 miles with this burner, while a similar car carrying only two passengers, using gasoline, and making the same trip cost 24 cents for 10 miles. The prices are based on the cost of kerosene and gasoline in England.

Enlargement of Kokomo Plant.

The Kokomo Rubber Co., of Kokomo, Ind., has just completed a large addition to its factory and has added a lot of new machinery beside thoroughly overhauling the old, thus making it possible to start on the product of next season in the best of shape. The company has had a splendidly prosperous year and its officers are thoroughly pleased with results.

Preparations for the Shows.

President Davis of the National Association of Automobile Manufacturers was in Chicago at the beginning of the week on business connected with the Chicago show. He reported that it had been found impossible to take care of all the applicants for space at Madison Square Garden under the plans originally drawn, and that the diagram had been changed so that some of the aisles might be omitted and the available space thereby increased. Apparently the prospects of accommodation for late applicants for space are not encouraging. The printed matter for the Chicago show is in course of preparation, but will not be issued until after the next meeting of the manufacturers' association, which follows closely upon the October endurance run.

Trip in One of Dyke's Machines.

Dr. C. L. Morey and H. T. Cunningham of Centralia, Ill., have just completed a round trip to St. Louis and back, a total distance of 165 miles. Messrs. Morey and Cunningham report that there was not an accident or anything to mar the pleasure of the trip, except on the return they were caught in a heavy rain and drenched to the skin.

They left Centralia Tuesday morning and arrived in St. Louis that afternoon. They spent Wednesday guests of A. L. Dyke and left St. Louis at noon on Thursday, arriving in Centralia that evening. The roads were very rough and hilly, but the gentlemen report that they had no trouble whatever in taking the hills and rough roads. The machine was built by these gentlemen at Centralia. They purchased the parts of Dyke's No. 1 outfit from A. L. Dyke, St. Louis.

The American Tank and Fixture Co. has changed its name to Acorn Brass Mfg. Co. and increased the

capital stock from \$50,000 to \$200,000. The Acorn Brass Mfg. Co. has acquired the property and good will of the Acorn Brass Works, and will continue the business of the constituent companies at 51 North Peoria street, Chicago. The management of the affairs of the company is in the hands of a board of five directors, as follows: Samuel M. Hastings, George M. Ludlow, James S. Knight, Robert L. Doran and Frank Marimon.

The Upton Machine Co. has bought a large plant at Beverley, Mass., where its business headquarters will be conducted hereafter. Communications should be addressed to Beverly. The company has gone into the manufacture of automobiles for business and pleasure purposes, is in the market for accessories and would be pleased to receive circulars, prices, etc.

The Damlier Mfg. Co. has purchased property at Bayonne, N. J., on which it will erect a new plant.

The Phelps Motor Co., of Stoneham, Mass., is on the verge of completing its first experimental machine, and expects to manufacture for the market.

Since the first of May the Acorn Brass Works have been occupying much enlarged quarters on Fulton street, extending from Green to Peoria, and will continue the sale of its Doran lights on even a larger scale than heretofore.

Hibbard & Bush, said to be two Chicago men, are endeavoring to interest the people of Fond du Lac, Wis., in an automobile factory. The local advancement association has appointed a committee to confer with them.

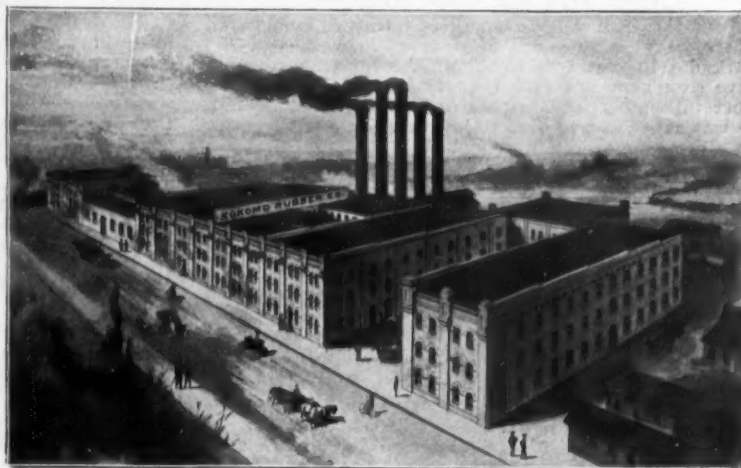
The Daily Motor Wagon Co., with capital of \$250,000, has been incorporated under the laws of South Dakota by O. W. Lord, of Everett, Mass., Frank Heath, of Boston, and T. P. Estes, of Pierre, S. D.

The Great Western Cycle Co., of Minneapolis, which handles the Rambler, is building an automobile livery, 60x80 feet, two stories and basement, to be ready for occupancy October 15.

The Adams' Express Co., whose steam truck was fully described in MOTOR AGE some months ago, is so well pleased with its work that bids have been asked for twenty trucks.

Schilder & Gramm of Chillicothe, O., have commenced the erection of a building to contain an automobile manufacturing plant.

The receiver of the Milwaukee Automobile Co. has declared a dividend of 5 per cent, or a total payment of \$1,535.



THE KOKOMO RUBBER CO.'S FACTORY.



THE CYCLE AGE

The situation of the American Bicycle Co. and the American Cycle Mfg. Co. has been complicated during the last week by a multiplicity of legal proceedings. First of all an application was made by friends of the

American Cycle Mfg. Co. to Judge Jenkins for the appointment of receivers, the gentlemen selected being the same as in the case of the American Bicycle Co., Messrs. Coleman, Pope and Miller. They did not take immediate steps to qualify by filing the necessary bond for \$150,000. Meanwhile a young attorney, Haffenberg by name, had been busy among some of the creditors. This gentleman represents the firm of Gann & Peaks, who have been prominently identified with practically every failure in the cycle trade since the crop commenced. The result was the appointment by Judge Kohlsaat of other receivers, by name Max Whitney and John C. W. Rhode, who qualified at once and took possession. They have placed a custodian in charge of each of the local plants. There is no reason to suppose, however, that this embarrassing situation will continue. The American Cycle Mfg. Co. claims to be perfectly solvent, though pressed for immediate cash.

Meanwhile Mr. Mead, formerly of the Monarch plant, but now manager of the Columbia factory at Hartford, has laid off about half the men pending completion of the reorganization of the A. B. C.

It has been rumored in New York that the reorganization committee would propose a \$5 assessment on each share of the company's stock. The chairman of the committee declined to discuss the matter.

Michael's Marvellous Mileage.

Brussels, Sept. 8.—We have just returned from Paris, where we went to see Michael in an hour race at the Park des Princes track. Of all the sporting events I have seen none has ever impressed me so much. The most intimate friends of the ex-jockey did not believe he was able to cover over 75 kilometers, especially after an absence of over a year and but six weeks' preparations. The pen is unable to describe the race. It was a terrible affair to see the men whirl around the steep turns and everyone felt uneasy until it was over. As to Michael, little is to be said. He is still the phenomenal little mechanic whose limit of speed is unknown. He still rides with a toothpick in his mouth and a smile which shows full confidence. He never gets shaken, and follows his pace as closely as ever.

Twenty thousand spectators crowded the big track, and only the day of the Major Taylor-Jacquelin match equaled the crowd. When Michael made his appearance there was a great demonstration which was kept up when Lesna, Bouhours, Jacquelin and Contenet appeared. As the start was given Michael jumped ahead and was soon leading. At the second lap the speed was so rapid that the records were almost equaled. Before 2 kilometers and tongs last lap of it in the final of the 2 mile open

had been run Contenet, paced by Anzani, passed Michael. This was the occasion for the first outburst of enthusiasm. Michael followed about 20 meters in the rear while the leader was urging for faster pace. During about 15 kilometers the unknown Frenchman and Englishman rode at top speed. About the twentieth kilometer Michael came up on even terms. On the next lap he tried to pass but the Frenchman held his own with ease. After three laps of waiting Michael again shot to the front, but the Frenchman was yet there and again during two laps had the little Welchman ride on the outside, preventing him from passing. A few more laps were ridden when, after being compelled to ride on the outside for nearly two laps, the little fellow finally passed ahead among a storm of applause. The 20-mile mark was just reached, covered in 25:38 1-5. Contenet made another attempt to make up his lost ground but fell back completely overcome by his early efforts, Michael passing his companions time and again. At the end of the hour he had ridden 75 kilometers, 273 meters, or nearly 2,000 meters more than Linton's previous record. Bouhours was second and Contenet third. After the race Michael told the newspaper men that he had never before had such a hard race as in the early part of this one. He concluded by saying: "Eight years ago Zimmerman said that Jacquelin would become a great rider. Today I will say that Contenet is the coming champion." Among the many records broken the following are the most important: 10 miles, 13:5; 20 miles, 25:38 1-5; 40 miles, 51:31.

Great Times and Close Finishes.

Newark, N. J., Sept. 21.—A continuous performance of good things rewarded the 2,000 spectators who braved threatening weather to see the cycle races at Vailsburg this afternoon. In the single paced 5 mile heat race Nelson showed a metropolitan district crowd how really good he was by reeling off 5 miles in time that came within three-fifths of a second of equaling the best single pace following record performance of Nat Butler and Howard Freeman, who covered the distance in separate heats recently, at this track, in 6:56. En route Nelson rode the fourth mile of the second heat in 1:21 3-5, which is the best mile ever ridden at this style of going, Freeman's 1:22 3-5 having previously ranked as the top notch.

There were two preliminary weeding out heats to select four men for the 5 mile heats. Newkirk was dropped by Maya and Nat Butler in the first heat and E. V. Holway in the second by Nelson and Freeman. Nelson won the first heat of the real race by a half lap from Butler, who beat Maya the same distance. The time was 7:01. Nelson set a terrific clip in the second heat and after 2 miles had his field straggling and stranded from their motors. He won as he pleased with Freeman second, Butler third and Maya fourth, all strung out. Nelson's times were: 1:23, 2:46 1-5, 4:09, 5:30 3-5 and 6:56 3-5.

Both the amateur races were marked by fast going and close finishes. E. F. Root and Marcus Hurley, respective Boston and New York champions, ran a dead heat from scratch in the mile handicap in 2:03, with Penn (120) third and Bailey (80) fourth.

Hurley, Billington, Glasson and Root had a hammer

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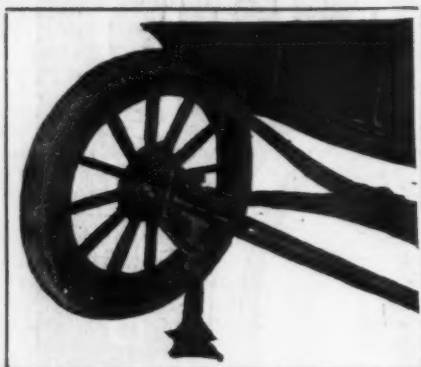
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and tongs last lap of it in the final of the 2 mile open and finished in this order inches apart. The official timers were away. The one man who held the watch announced 3:57 3-5 as the time. He had little abiding confidence in it, however. Neither had the "knowing ones" (and they mean everybody at Vailsburg), for Frank Kramer's world's record, made in one of the hardest handicaps ever run at this track, is but 3:59 4-5.

Some rain drops came down during the running of the handicap race for motor singles, and fearing disaster from slipping the referee stopped the race. It did not rain after all, and there were curses loud and deep from the eight contestants.

Championship Table Stands as Before.

Newark, N. J., Sept. 21.—For a second time rain prevented what was to have been the wind up of the grand circuit at Vailsburg. An effort was made to get an athletic club to forego its date for the track next Saturday. It failed and the championship struggle is at an end with the results as chronicled in this week's MOTOR AGE.

Zimmerman and Bald in Paris.

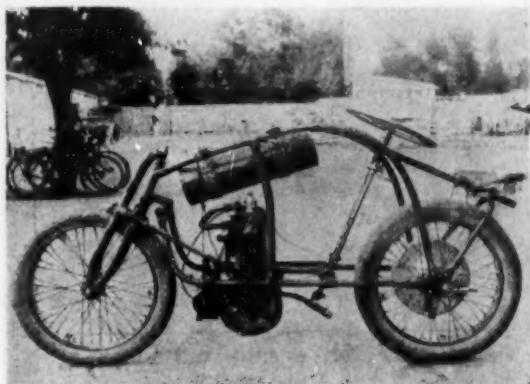
Cable reports have it that Zimmerman and Bald, now in Paris, are to ride a tandem match against Jacquelin and mate next Sunday. Zim's first exhibition ride was scheduled for Sunday at the Parce des Princes track. The former of the former champions spends much of his time automobiling with Fournier.

Motor Made a Mile in 44 2-5 Seconds.

Norwood, Mass., Sept. 20.—The world's record for a mile on a motor vehicle on a straightaway course was broken today when F. A. Gately and W. E. Penlyer, professional riders, of this city, on a motor tandem, covered the distance in 44 2-5 seconds. The course is a section of the Norwood highway and on a down grade. Three trials were made. On the first the distance was traveled in 59 seconds, on the second in 51 seconds, and on the third in 44 2-5.

Jacquelin's Motor Bicycle.

The accompanying illustration shows the latest type of French racing motor bicycle by Jacquelin. It is of startling and certainly ingenious construction. The gasoline tank is carried above the motor on the arched



The Jacquelin Motor Bicycle.

frame shown in the illustration. The motor is located vertically between two horizontal bottom tubes. The machine is fitted with wheel steering device the same as an automobile. Its weight is said to be only 140 pounds. The motor is 4.5 inches bore and 4.72 inches

stroke, is 8 horsepower and has developed a speed of 58.9 miles per hour.

Zim's Early Races in Europe.

Now that the great Zimmerman is to reappear on European tracks it might be interesting to read the story of one of his first great races on the continent as told by one who saw him at that race in July, 1894. "For weeks," he says, "the announcement of Zimmerman's coming appearance at the Velodrome du Bois de la Cambre at Brussels, was the topic of conversation almost everywhere in town. The daily papers had given the matter the most prominent position on their front pages and the coming of the American rider had as much effect as if he had been a royal visitor. All over the city big posters had been placed while thousands of hand bills had been distributed. I was fond of the racing game at that time and had followed the American's few races in Italy with interest. Being a college boy I interested nearly every one in my class as well as others and we decided to see the "Flying Yankee." Although the admission fee had been doubled, a large, fashionable crowd filled the grand stand and other available space around the quarter mile cement track. Long before the beginning of the meeting hardly any room was left and when the bell rang for the first event the police department ordered the doors closed, fearing accidents on account of overcrowding. Four heats were run before the final. Besides Zimmerman and Wheeler nearly every rider of any reputation in Europe took part. What made the meeting more interesting was the participation of Houben, the Belgian champion, at that time really the best man in Europe.

"The heats, being run without any time limit, were somewhat uninteresting except the one in which Jimmy met Huet, another Belgian rider, at the time in grand form. The American won the heat by less than a wheel and with difficulty, and the enthusiasm over the fine showing of the Belgian added to the excitement. Houben and Medinger, the French champion, were the only starters in their heat and as two qualified in each heat they went around the track holding each others hand to the satisfaction of the gallery.

"When, finally, the bell rang calling the eight riders for the final, the spectators remained silent. The men rode around the track at a slow gait, Zimmerman keeping in last position until the bell, at which time Houben had the lead. The pace had been increased as the riders knew of the American's great final sprint and already the people cheered the Belgian, thinking he would win. It being the custom to raise the flag of the rider's country the man in charge had already attached the United States flag, being one who believed in the American. Coming out from the first turn of the last lap Zimmerman was still last, but then, with power and ease that made every one cheer and wonder, he passed every rider until he was within half a length of the Belgian champion. The home stretch had been reached and the American was now within reach of the champion of Europe, but the latter was putting up a splendid effort and stood off the attack of the flying Yankee to the astonishment and indescribable enthusiasm of the crowd. Although making every possible effort the American was not able to pass the little Belgian, who crossed the tape a winner by half a wheel. The crowd jumped over the fences from every part of the track, although there was a strong police service. Houben was carried off wrapped in a Belgian flag and prominated around the track by his admirers, while the great American was almost forgotten.

"Later on Zimmerman offered Houben a return match, but the latter simply said: 'I ride here every Sunday, so you can meet me whenever you like in an open race.' Zimmerman did not accept his view and never met the Belgian again, but after that day, so far as I can re-

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member, he did not suffer a defeat during his long stay in Europe. Since then no other Zimmerman has been seen on the European path and I do not believe another will.

"From the present indication of the French papers Zimmerman's tour in Europe will attract larger crowds than 8 years ago, and most of his former rivals whether they are still riding or not, have decided to greet him at the banquet which will be offered him some time in October."

Late European Racing.

In the many grand prix races run this season Meyers, the Dutchman who showed so prominently at the time of the world's championships, has not had a fat share. At Liege, Belgium, however, he captured the large part of the money from a fair number of good men. After winning his heat and semi final without effort he was matched against Grogna and Vanden Born in the final. It was a slow affair until the bell. At 200 meters from the finish Vanden Born fell through a puncture. Grogna escaped the fall, but lost some ground, while Meyers won the purse. Immediately after the race the Dutchman offered to ride the final over, acknowledging that the result was not regular. Grogna refused to start again, but Vanden Born accepted. This time the Belgian had no accidents and won easily by a few inches. at an expense of \$30 and the car now runs as well as ever.

Although he had raced in nearly every important cycle center of Europe time and again, Ellegaard attracted nearly 6,000 people on the 7th at Cologne, Germany. In the principal race many good riders were entered. Four heats and a consolation were run before the semi-finals. In the first of the latter the Danish champion won by fifteen lengths. The second heat was closely contested and Rutt won by inches. In the last semi-final Grogna had it his own all the way. The final resulted in a hot struggle in which the Dane showed his marvelous speed. Rutt was second by half a length. The tandem race resulted in something like a walk-over for Ellegaard-Rutt who won by one-quarter of a lap from the five other starters. Grogna won the handicap from scratch mark.

A large crowd assembled at the Zurenborg track, Antwerp, Belgium, on the 7th and seemed glad to see Meyers, the Dutchman, win the three cornered match against Momo and Vanden Born. In the first heat the last named rider took the lead at the bell and won by two lengths from Meyers. In the following two heats Meyers won easily.

The hour race was to be the main event at the Buffalo meeting, Paris, September 1. Bouhours was scratch, Taylor had a start of five laps and Gougoltz ten. At the fifth kilometer Bouhours slipped and fell. He lost a dozen laps and gave up. Taylor won. In the scratch race Bourotte ran away from ten others; Jenkins second, Gougoltz third.

Ellegaard scored another victory by defeating Arend in three straight heats at Cologne on August 31. Over 6,000 people saw the event and were stupefied at the ease with which the Dane won the match.

Robl won both the 10 kilometer and 25 kilometer events at the Kurfurstendamm track, Berlin, on August, 31.

Notes Among the Racing Men.

Most of the racing cyclists are arranging with partners for the 6-day team race that will be held in Madison Square garden early in November. Last year five teams were tied until the last mile and a sprint determined the distribution of the prize money. Walthour, of the Columbia team, finished first and as his partner Archie McEachern is dead, he will have to secure another mate. Lester Wilson, of the Rambler team, will again ride with

Otto Maya as his partner, while Jed Newkirk, of the Crescent team, and J. P. Jacobson, of the Cleveland team, are expected to combine. W. F. King, of the Tribune team, will again be a competitor. He expects to do more or less racing on the French tracks during September and October and will return to New York early in November to prepare for the 6-day team race at Madison Square garden.

Encouraged by the success of other promoters, business men in various cities throughout the country are preparing to invest in cycle coliseums. Particularly is this so in the south, since Walthour of Atlanta won the middle distance championship of America. Messrs. Pickens and Bell are constructing an eight lap track at East Lake, near Birmingham, Ala., and will open late in September. James Burbridge of Jacksonville is negotiating with E. M. Sperry for the construction of a board track at Jacksonville which it is expected to open about the middle of October.

One of the amusing incidents of the N. C. A. circuit occurred at Hartford during the last meeting when Kramer and McFarland, who started in the first heat, were shut out by Alexander, the local rider, and Jacobson of the Cleveland team. It seemed almost unnecessary to run the heat with these four men as starters. A lap from home, however, Alexander made a jump, followed by Jacobson, and the pair soon opened a gap that neither the champion nor McFarland was able to close. It shut them both out of the money and points.

From our Berlin contemporary Rad-Welt, we learn that in the motor cycle race held in Frankfurt on the Main, Aug. 31, distance 4,827 meters, F. Rigam, with a Kelecom of 2½ horsepower, won easily. The paper states that the race belonged to the Kelecom from the start, and beat all of the others by a big margin. The bicycle used is identical with the one which came in second on Labor day, and which was entered by the sole agent of the Kelecom motors in this country, A. H. Funke, 98 Duane street, New York.

Cycle racing will be transferred within a few weeks from the north to the south. The speed merchants will go to Atlanta, where Jack Prince has erected a coliseum on which the fastest kind of racing can be conducted. Walthour, the middle distance champion of the year; George Leander of the Crescent team, and James Hunter of the Cleveland team, are among the riders who are scheduled for matches.

Munroe and Hunter, who were recently severely injured at Baltimore, are still in the hospital, and though slightly improved are still in a critical condition. Leander, whose injuries were comparatively slight, has been discharged from the hospital, and a race meeting for the benefit of the injured men is being arranged.

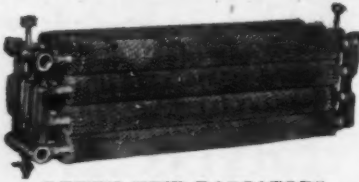
A cablegram from London, dated the 13th, says that Arthur Chase reduced the 5-mile cycling record to 7m. 37.1-5s, and rode 21 miles in 31m. 12.4-5s. Chase tried to lower his own one-hour record, but his motor pacer broke, and he was 500 yards short of accomplishing the feat.

Having won the middle distance championship of America, Walthour may now attempt to put the world's hour record higher. Following the news that Michael had negotiated more than 46 miles Walthour announces that he will attack the record within another week.

The Associated Cycling Clubs of New York will hold a 25 mile handicap road race on Thanksgiving day. Part of the course will probably include that used for the automobile straightaway time trials on Staten Island.

Major Taylor announces his retirement from the cycle track. He has been thrifty and businesslike in all his dealings since he became prominent, six years ago, and is said to have accumulated enough money for his needs.

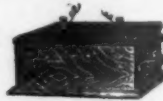
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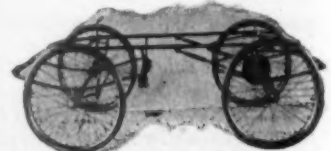


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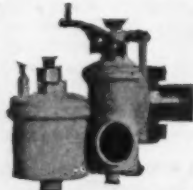
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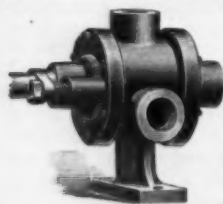
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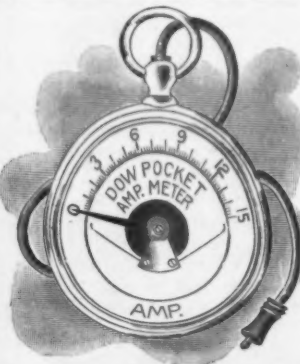
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The Kelecom has been proven in American and European contests to be one of the most reliable and economical engines on the market. American builders who are using Kelecom Motors are all behind in their orders. The 1½ and 2½ h. p. Bicycle Motors are without an equal. Send for illustrated catalogue. *U. S. Pat. 1,111,111*

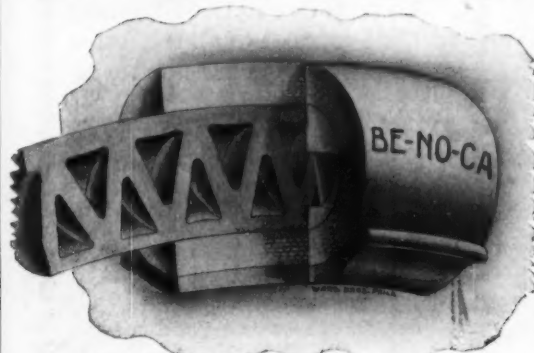
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98 Duane Street,
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"BE-NO-CA"

(Trade Mark.) Known to the trade as the

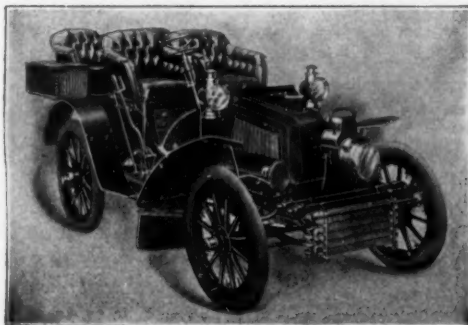
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Built on the truss principle, it's strong and the strain is equally distributed. Amply resilient yet defies destruction or disabling by puncture. Can be used until completely worn out.

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"Style F," 16 H. P. with removable Tonneau.

The Peerless Touring Car

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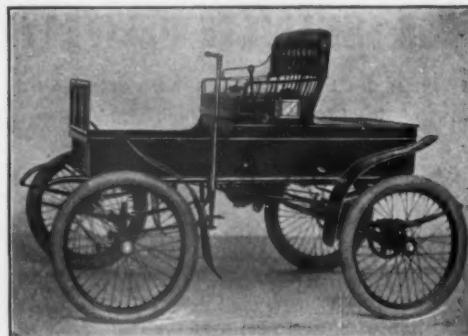
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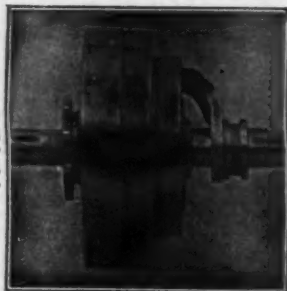
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MERIT IS TELLING.

We have closed a number of contracts with important manufacturers who will use

CHAMPION CLUTCHES

exclusively next season.—Why not you?

Our clutch is no experiment—it is a standard article in all respects. Pinions do not strip, noise practically nil and power is transmitted with the smallest possible percentage of loss.—Examine the clutch closely and note its strength. Will outlive any other part of the machine. :: WRITE FOR CIRCULAR.

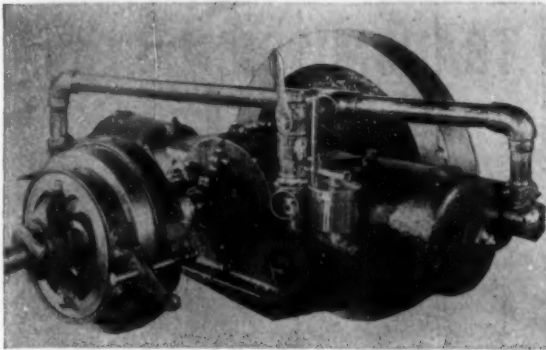
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BRENNAN STANDARD GASOLINE MOTORS

Manufactured in sizes from 4 to 30 H. P.

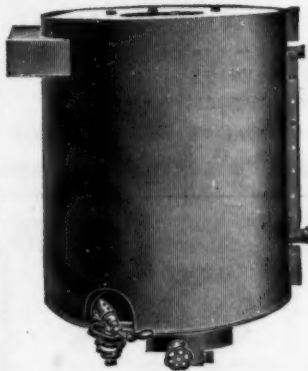
They are perfectly balanced, smooth running, will save wear and tear on your auto. Referring to speed, our 6 H. P. will develop its rated power at 650 revs. per minute, and 9 H. P. on high speed. Our 8 H. P. will develop its rated power at 750 revs. per minute; will develop 12 H. P. on high speed. Guaranteed to give satisfactory results or money refunded.


Special 15 and 20 H. P., with Transmission Gear.

Brennan Motor Co., SYRACUSE, N. Y.

SOME OF THE MANY
ADVANTAGES OF THE

Salamandrine!



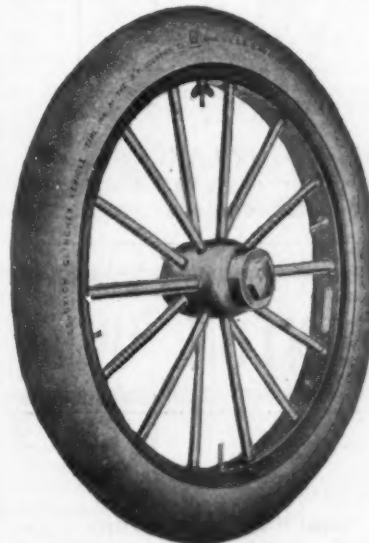
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Accumulates Steam
On Hills. 
Cannot Burn Out.
Safe and Reliable.


Send for New Descriptive Pamphlet, Describing its
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American Tubular STEEL WHEELS




Neat
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Will Not
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is the best proposition in the automobile line. If you haven't seen one and don't know why, just ASK US.

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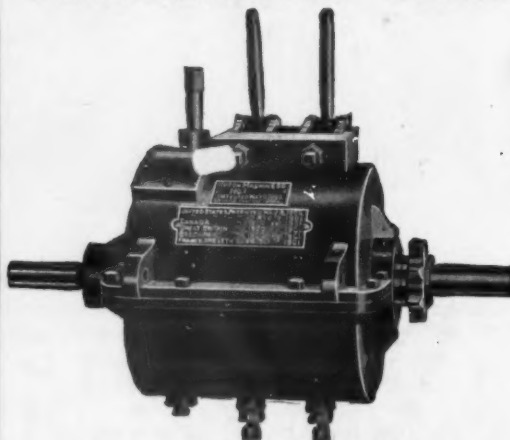
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**TWO SPEEDS FORWARD
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ALL GEARS RUNNING IN OIL

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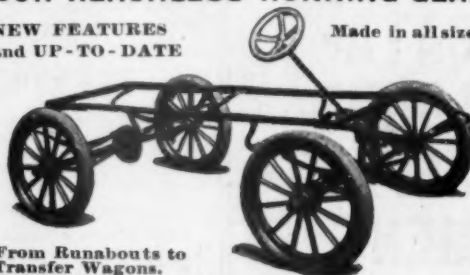
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OUR REACHLESS RUNNING GEAR

NEW FEATURES
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Made in all sizes,



From Runabouts to
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Highest Award Pan-American Exp. 1902

20TH CENTURY HEAD-LIGHTS
FOR BICYCLES, CARRIAGES, AUTOMOBILES, YACHTS, MINES, HUNTING & ETC.
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BICYCLE GAS. AUTO OIL. MINERS GAS. AUTO GAS. AUTO HAND-LANTERN GAS. AUTO OIL. STYLE A. BICYCLE OIL.

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WATER COOLED FOUR CYCLE UPRIGHT GASOLINE MOTORS

Two and Four Cylinder type. From 8 to 60 h. p. for Automobiles and Launches. From 10 to 150 h. p. for stationary purposes.

Also AUTOMOBILES of Every Style
DELIVERY WAGONS, OMNIBUSES
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The Rutenber Manufacturing Co.
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Gas Engine Igniters

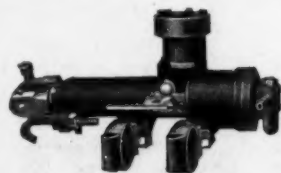
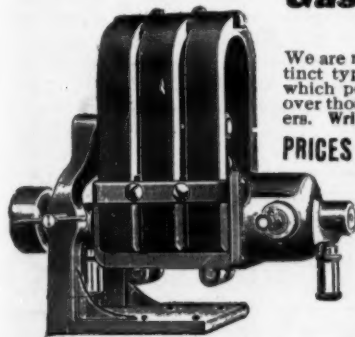
We are manufacturing three distinct types of Igniters, each of which possess many advantages over those of other manufacturers. Write us for Circulars.

PRICES \$12.00 TO \$15.00

Adapted to Marine, Automobile and Stationary Engines.

THE CARLISLE & FINCH CO.

224 E. Clifton Av
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Forego the old hand pump. Equip your Auto with the

REASON
Automatic Air Pump.

(For Steam Vehicles.) Can be adjusted for maximum and minimum air pressure at any

two points between 5 and 50 pounds. If "set" for instance, at 35 and 60 lbs. air pressure, the pump operates until 60 lbs. is indicated, then locks, but starts again automatically when pressure falls to 35 lbs. Let us send booklet.

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REASON AUTOMATIC AIR PUMP CO., 52 First St., DETROIT.

The Tires

on an automobile either increase or retard its speed. Resilient tires give additional power and greater mileage.

G. & J. Detachable Tires

have been proven the speediest of all vehicle tires, and they wear longest. Descriptive Catalog and full information on request.

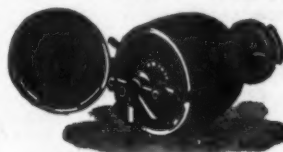


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THE APPLE IGNITER

Your automobile is not complete without it. They are well built and nicely finished. Entirely enclosed making them dirt and water proof with means for easy access as shown by cuts.



Dynamo with door open.



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Reliable Automatic Features
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THE VICTOR STEAM PUMPS.



Size, 9 in. x 3 in., weight, 4 1/2 lbs. Capacity of Air Pump, 100 lbs. pressure on tanks or tires. Capacity of Water Pump, 3 gallons per minute against 200 lbs. boiler pressure.

Price, \$30 Each.

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Is the recognized Standard for AUTOMOBILE and BICYCLE CONSTRUCTION

Loss in manufacture will be reduced to a minimum and stability of product secured by the use of Shelby Tubing

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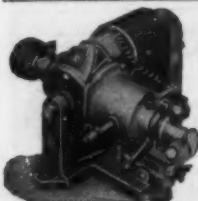
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Has been adopted
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**34 Pitch,
3/8-inch. Wide.**
**Tensile
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4,000 lbs.**
**BALDWIN CHAIN CO.,
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35,000 IN USE.

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SOLE UNITED STATES AGENT.



To Owners of Gasoline Engines,
Automobiles, Launches, Etc.
The Auto-Sparker

does away entirely with all starting and
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Can be attached to any engine now using
batteries. Fully guaranteed; write for de-
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MOTSINGER DEVICE MFG. CO.
41 Main Street, Pendleton, Ind.

ELECTRIC CHARGING PLANTS

For AUTOMOBILES and LAUNCHES

"SELF STARTING"

Write us for prices etc.

MERIAM-ABBOTT CO.,
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The Locomobile Company of America,

1354 Michigan Avenue,
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H. L. HOFFMAN MOTOR CO JOLIET, ILL.

Manufacturers of Single 4 H. P.,
Double 7 H. P., Four Cylinder 16
H. P. Gasoline, Automobile or Marine,
4 cycle Motors, Either Horizontal or
Vertical. Fully Guaranteed. Prices
the lowest.

Your patronage is solicited.

THE HOWARD SYSTEM

INDISPENSABLE
For Starting Fire
on STEAM AUTOMOBILES.

PATENT APPLIED FOR.....

No preliminary heating; starts a gasoline burner instantan-
eously with a match, like a gas burner. Safe, quick and clean.
A postal card will tell you all about it.

J. F. HATHAWAY, 31 Chester St., West Somerville, Mass.

THE "CLEVELAND."

6 H. P. Gasoline Runabout

Long Wheel Base. Reachless Running Gear.

A Good Hill Climber

Immediate Delivery. Write for Catalogue and Terms.

GENERAL AUTOMOBILE & MFG. CO.

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MISCELLANEOUS

Advertisements under this head 5 cents per word first in-
sertion; 3 words per word each insertion thereafter. Cash
with order. Express orders, postoffice orders or stamps re-
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FOR SALE.—1 Haynes-Apperson tonneau touring car
(rebuilt); 12 h. p.; car weighs 1,650 lbs.; resembles
Winton car; 34x4 tires; a beauty; fast and powerful
and guaranteed in every way. Price, \$1,600. Get photo
and particulars. 1 Fournier Searchmount, 12 h. p.; new
in April; price, \$800. 1 Locomobile, complete, \$450;
1 Mobile, complete, \$500; 1 Locomobile, complete, \$375;
2 steam surreys, complete, \$800; 1 Waverly, complete,
\$460; 1 Waverly, new, \$680; and others. Get our list.
Fisher Automobile Co., Indianapolis, Ind.

FOR SALE—Cheap—Dynamos and Motors, stand-
ard makes, all guaranteed; reliable repair work.
Schureman & Hayden, 139 S. Clinton street, Chicago.
Telephone 1648 Main. **tf**

FOR SALE—Electric delivery wagon, good condition,
at very low price. SCHURMAN & HAYDEN, 137-
137-139 S. Clinton St., Chicago.

FOR SALE.—Owner, having bought 16 horsepower
machine of same make, will sell 8 horsepower Re-
nault, 1902 pattern, imported in May, in perfect condi-
tion. Responsible prospective purchaser may test it
thoroughly. For details address Renault, care MOTOR
AGE, Monon building, Chicago.

WANTED—Immediately, competent man, experi-
enced in gasoline automobile manufacturing, to
take charge of factory; must work and know when his
men are working; can't use any experimenters, but
must know from actual experience what is practical,
and be a designer and make own drawings. Address
"Western Factory," care of MOTOR AGE.

WANTED—Live business man with \$5,000 to in-
vest in established automobile business in the
middle west; management of business to go with in-
vestment to the right party. "D," care of MOTOR AGE.

WANTED.—Position on the road or manager of sales
department for a concern who wants to "get the
business." Thoroughly competent and thoroughly
posted in automobile business. Address Practical Gaso-
line Expert, care MOTOR AGE.

CLEARANCE SALE—NEW AUTOMOBILES at less
than factory prices.

F. O. B. St. Louis and Kansas City, consisting of
following models:

- 2 "Model A" Touring Cars, Red and Green.
- 1 "Dos-a-Dos," Red.
- 1 0003 Black and Green Top Carriage.
- 1 05 Black and Green Surrey.
- 1 03 Black and Green Top Carriage.
- 1 02 Black and Red, without Top.

All new 1902 Models with latest improvements—
heavy spokes, heavy chains, steam pumps, etc. We also
have a number of second-hand Locomobiles, Oldsmobiles,
Toledos and Haynes-Appersons at from \$350.00 up,
which we will close out at prices that will sell them.
Write for detailed price list and description at once if
you want a bargain.

DAY AUTOMOBILE CO.,
4105-7 Olive St.,
St. Louis, Mo.

IMPORTANT MILWAUKEE MATERIAL SALE

We have purchased all the material left on hand at the time of the failure of the Milwaukee Automobile Co., and the prices quoted below apply only where parts are wanted in lots of 25 or more of a kind. **Smaller orders will be filled, but only at an advance of 50 per cent in price.**

All parts are forged unless otherwise specified, the only cast parts being the front spring blocks, brackets for carrying side steering fittings and by-pass lever set, steps and hubs, all of these, however, being cast steel.

Almost every fitting is machined, that is, bored, faced and drilled ready for pinning and brazing.

Lugs are bored for 1 1/4 inch main frame tubes.

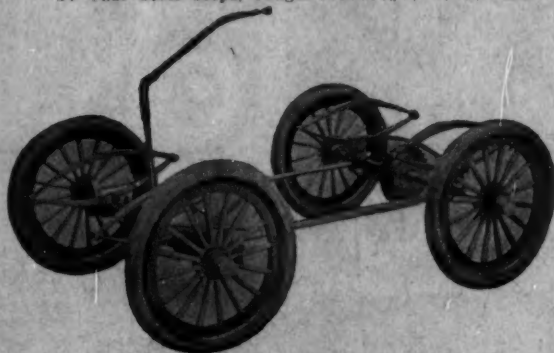
There is not a piece of cheap material in the lot, all of it being of the best in every particular, each and every piece being a bargain considering its quality.

The differential gears offer splendid value, they being bored for 1 1/4 inch shaft, some fitted with 30-tooth sprockets for 1x4 block chain.

We refer to Our Catalogue No. 1, page 19, where reference numbers are given, many of the fittings being the same while others are quite similar in design.

We will be pleased to ship samples upon receipt of small order prices. No rebates allowed on such orders should a quantity be taken at a later date.

	Each.		Each.
332 Straining rod yokes (similar to No. 21 Our Cat.), some rough, some machined.	.20	168 Pinions for bevel differential gears.	.25
708 Rear axle ends (same as No. 1 Our Cat.), bored for tubing and machined for cup.	.50	50 Cut gears to fit above pinions for side gears of differentials, forged.	1.00
149 Engine sprocket blanks, bored and turned ready for milling, 5-16 thick and for 12 and 14 teeth.	.05	27 Foot break levers, nicked with bed plate, bolts and nuts.	.50
898 Machined front axle ends (No. 2 Our Cat.)	.55	254 Machined forgings for carrying steering post-socket, similar to No. 6 Our Cat.	.10
378 Lugs for side steering fittings (similar to No. 37 Our Cat.), but heavier. Machined and bored.	.05	108 Foot break levers, unmachined (forged).	.10
25 Half rear axles, machined and threaded for cones, etc., 1 1/4 inch diameter.	.50	237 Forged levers for connecting throttle operating shaft to throttle, similar to No. 24 Our Cat., except that the end is like No. 8.	.07
1304 Axle end lugs, R. & L., for axle each side of differential (similar to No. 3 Our Cat.), but with projecting lugs to take diagonal braces like Nos. 39 and 49 Our Cat. Machined.	.30	155 Small forgings, rough, similar to No. 37 Our Cat.	.02
80 Steering knuckles, 3/4 inch in the rough (forged), similar to No. 17 but smaller.	.50	116 Forged L levers, bored, long arm 3 in., short arm 1 in.	.02
905 Rear axle spring blocks, bored and drilled.	.30	146 Forged, rough, steering rod ends, similar to No. 37.	.02
260 Front spring (single) blocks (cast steel), bored.	.10	94 Top brackets, rough cast steel, for side steering fittings.	.10
129 Large sprocket blanks, bored 8-16 inch and turned, 3/4 and 5-16 thick.	.15	100 Lower brackets, rough cast steel, for side steering fittings.	.10
35 Nicked center and side steering posts in fairly good condition.	.50	664 Reach end T, forged, bored.	.10
28 Nicked center steering handles, bent.	.50	118 Forged reach end lugs, machined, for arch on rear axle, left side, from the rear, with lug for small diagonal brace.	.15
6 Nicked connecting rods between knuckles and center lever.	.10	157 Same as above, machined, some rights and some lefts.	.15
14 Sheet metal mud guards, not enameled (rears).	.50	57 Same as above in the rough.	.10
14 Sheet metal mud guards, not enameled (fronts).	.60	62 Large forged levers for throttle or reverse, partially machined.	.15
4 Patent leather mud guards (rears).	.75	27 Small forged levers for throttle or reverse, partially machined.	.15
16 Patent leather mud guards (fronts).	.80	98 Cast steel hubs, in the rough.	.20
21 Patent leather dashes.	.75	37 Front hubs, machined and drilled, some nicked.	.50
774 Reach brace clips, machined for 1 1/4-inch tube only (similar to No. 18 and 9 Our Cat.)	.07	50 Rear hubs, machined and drilled, some nicked, all key-seated.	.50
301 Steering lever forgings bronched (square hole) and drilled, similar to No. 22 Our Cat. except that hole is square.	.25	166 Cast steel bearing lugs for mounting by-pass lever, throttle and reverse mechanism in body. Rough.	.05
17 Cast steel steps, rough.	.10	32 Forged braces or yokes to go round differential (similar to No. 19 Our Cat.); these rest on axle ends next to differential, said axle ends forming a brace plate to which yoke is bolted. Drilled.	.60
		237 Small forked forgings, rough (similar to No. 8 Our Cat.).	.05
		48 Steering rod ends, like No. 37 Our Cat.	.02
		82 Steering rod ends, female ends to match above, like No. 8 Our Cat.	.02
		281 Similar to No. 24 but shorter, with slotted end, partially machined.	.08
		68 Same as above, machined.	.10
		48 Same as above but with longer arm, male end, partially machined.	.08
		31 Blank cast caps for wire wheel hubs, rough.	.01
		100 1/4 brass tees.	.04
		50 1/4 brass crosses.	.08
		500 Pin valve, wood handle.	.01
		80 Bevel differential gears complete, less sprockets for 1 1/4 shaft.	7.00
		25 Bevel differential gears complete with 30 tooth sprocket for 1x5-10 block chain, new.	8.50
			Slightly used 8.00



TERMS: Cash with order, or half cash, balance C. O. D., or sight draft with bill of lading attached. **Remittances must be made either P. M. O. or Chicago or New York Exchange.** Orders accompanied by checks will not be filled until checks have been passed through the banks and exchange charges paid. We have eight Brecht (3,500 lb. capacity) running gears, like illustration, that we are making remarkably low prices on. Send for circular.

THE P. J. DASEY CO., 19 AND 21 LA SALLE ST., CHICAGO, ILL., U. S. A.



Figuring the Profits

As the season draws to a close have you any

Profits to Figure?

Were you one of the wise dealers who bought good bicycles and, aided by their reputation, made money on them?

If not, do better hereafter. You are in the minority.

Ask some member of the great majority of dealers—all of our agents have made money this season—and he will advise you to select from this line of machines:

**Columbia, Crescent, Cleveland,
Monarch, Tribune, Rambler,
Imperial, or our line of Juveniles.**

We can give you Motor Bicycles of unquestioned speed, economy and durability. Hygienic Cushion Frames, Regas Spring Frames.

There is yet time to sell a lot of them.

American Cycle Mfg. Co.

Western Sales Department, 497-501 Wells Street, Chicago, Illinois.

EASTERN SALES DEPT.
152-154 Franklin St., New York City.

PACIFIC COAST BRANCH,
451 Mission Street, San Francisco, Cal.